Algebra – Model No 1

Q1 Choose the correct answer:

(1) A right circular cylinder, its base radius **3** cm , height **5** cm, then its volume = ……………… cm^2

a) 15π b) 75π c) 45π d) $\frac{3}{5}\pi$

(2) $\sqrt[3]{54} - \sqrt[3]{2}$ = ………….

a) $3\sqrt[3]{2}$ b) $2\sqrt[3]{2}$ c) 3 d) 2

(3) If the ordered pair **(2,k)** satisfy the relation **Y– 2X = 1**, then K =...

a) 0 b) 3 c) 4 d) 5

(4) The conjugate of $\frac{1}{\sqrt{5}+2}$ = …………

a) $\sqrt{5}+2$ b) $\sqrt{5}-2$ c) $2-\sqrt{5}$ d) $-\sqrt{5}$

(5) If the slope of straight line passes through two points (3 , y) , (5 , – 2) equals **– 3** , then Y = …………

a) 2 b) 4 c) 6 d) – 30

(6) The intersection point of ascending and descending cumulative frequency curves determines the ………………..on the set – axis.

a) Median b) Mode c) Mean d) Order of median

Q2 Complete each of the following:

1) If the lowest boundary of a set is **8** and upper boundary is **12**, then its center is……………………….

2) If $\sqrt{x} = \sqrt{2} + 1$, then X = ………………….

3) The mode of the values 4 , 5 , 6 , 8 , 7 is …………….

4) $\sqrt{2}$, $\sqrt{8}$, $\sqrt{18}$, $\sqrt{32}$, ………….. complete same pattern

5) If the median of a+2 , a+5, a+1, a+4, a+3 is **10**, then a = ……

Q3

A) Find in $\mathbb{R}$ the solution set of:

① $4 < 3x + 1 < 10$ ② $(2X - 3)^3 = 125$

B) If volume of sphere **36 π** cm^3. Find the surface area in term of π?

Q4

A) Represent graphically the relation: $Y = 3 - 2X$

B) If $X = \frac{\sqrt{6} + \sqrt{5}}{\sqrt{6} - \sqrt{5}}$, prove that: $X + \frac{1}{x} = 22$

Q5

A) Simplify to the simplest form:

$$5\sqrt{3} + 2\sqrt{27} - 3\sqrt{12} - 6\sqrt{\frac{1}{3}}$$

B) The following table represents the frequency distribution of overtime pay for **30** workers

Set	15–	25–	35–	X–	55–	65–	75–	Total
Frequency	2	K +1	5	8	6	4	2	30

✍ find: ① Value of X , K ② The arithmetic mean

End of the questions

ALGEBRA – MODEL NO 2

Q1 ***Choose the correct answer:***

(1) The volume of cuboid whose dimensions $\sqrt{2}$, $\sqrt{3}$, $\sqrt{6}$ = ... cm^3

a) 6 b) 36 c) $6\sqrt{6}$ d) $18\sqrt{2}$

(2) [–3 ,4] ∩ [2 , 6] = ...

a) [–3 ,6] b) [–3 , 2] c) [4 , 6] d) [2 , 4]

(3) If the ordered pair **(5,2)** satisfy the relation **X+2Y=K**, then K =......

a) 8 b) 9 c) 7 d) 6

(4) If four times number is **48**, then third this number is ....

a) 2 b) 4 c) 6 d) 8

(5) If the slope of straight line passes through two points (–3 , X) , (–1 , 1) equals **2**, then X =

a) 2 b) 4 c) 6 d) – 30

(6) If the ordered of the median is fourth value, then number of these values is ....

a) 6 b) 7 c) 8 d) 9

Q2 ***Complete each of the following:***

1) If the lowest boundary of a set is **10** and upper boundary is **30**, then its center is.............................

2) If X ∈ [– 3 , 2] , then X^2 ∈ ....

3) If the mode of the values 4 , 3 , X+2 , 9 , 7 is **4** , then X = ...

4) If the X is even number, then the next even number to it is .....

5) The intersection point of ascending and descending cumulative frequency curves is **(50 , 132)** then the median is ....

Q3

A) Find in $\mathbb{R}$ the solution set of the inequality then represents the solution on the number line:

$$\frac{x}{\sqrt{3}-\sqrt{5}} \leq \sqrt{3}+\sqrt{5}$$

B) A piece of paper has shape of rectangle **ABCD**, **BC = 44** cm, **AB = 10** cm. If it was folded to form a right circular cylinder such that $\overline{AB}$ is coincide on $\overline{CD}$. **Find** the volume of resulted cylinder? ☐

Q4

A) **Represents** graphically the straight line which represents the relation **2X + 3Y = 6**, if it cut X-axis at point **A**, cut Y-axis at point **B**. **find** the area of Δ OAB where O is origin point

B) If $\frac{x}{y} = \sqrt{3}-\sqrt{2}$, find the value of $\frac{x^2+y^2}{x\,y}$.

Q5

A) **Simplify to the simplest form:**

$$\sqrt[3]{24} - 3\sqrt[3]{\frac{1}{9}} + \sqrt[3]{-81} - \sqrt[3]{3}$$

B) Find the arithmetic mean for the following frequency distribution:

Wages	10–	20–	30–	40–	50–	Total
No. of worker	3	4	6	5	2	20

End of the questions

Algebra – Model No 3

Q1 Choose the correct answer:

(1) The irrational number included between **2** , **3** is ....

a) $\sqrt{10}$ b) $\sqrt{7}$ c) $\sqrt{3}$ d) 2.5

(2) The volume of sphere of diameter **1** cm is ....cm^3

a) $\frac{1}{6}\pi$ b) $\frac{1}{8}\pi$ c) $\frac{4}{3}\pi$ d) $\frac{3}{4}\pi$

(3) If ordered pair **(1,–2)** satisfies the relation **5X+bY=17**, then b =.....

a) – 6 b) – 4 c) 4 d) 6

(4) $\sqrt{\frac{1}{2}} + \sqrt{\frac{1}{2}}$ = ...

a) 1 b) $2\sqrt{2}$ c) $\sqrt{\frac{1}{4}}$ d) $\sqrt{2}$

(5) If $n \in Z^+$, $n < \sqrt{11} < n + 1$, then **n** = ...

a) – 3 b) 3 c) 4 d) 10

(6) If the arithmetic mean for five values is **12**, then the sum of these values = ...

a) 30 b) 50 c) 60 d) 120

Q2 Complete each of the following:

1) The slope of straight line parallel to X-axis equals ....

2) [–3 , 2] –] –3 , 2 [= ....

3) The median of the values 34 , 23 , 25 , 40 , 22 , 4 is ....

4) If the mode of the values 5 , 7 , 8 , X^2 is 8, then 3 X = ...

5) The sum of all real numbers in [– 80 , 80] = ...

Q3

A) If $X = \sqrt{7} + \sqrt{5}$, X Y = 2. Find the value of $\frac{x+y}{x\,y}$

B) The volume of right circular cylinder is **72** π cm^3, its height equals to its base radius. Find the height of the cylinder

Q4

A) Find the value of **m** which make the points (4 , - 3) , (**m** , 7) , (5 , –4) are collinear.

B) Find in $\mathbb{R}$ the solution set of the inequality then represents the solution on the number line:

$$\frac{3x+1}{6} < X + 1 < \frac{3x+4}{2}$$

Q5

A) **Simplify to the simplest form:**

$$\sqrt{125} + 2\sqrt[3]{81} - \sqrt{20} + 3\sqrt[3]{-24}$$

B) Find the arithmetic mean for the following frequency distribution:

Wages	4–	8–	12–	16–	20–	Total
No. of worker	12	4	8	6	4	20

End of the questions

Algebra – Model No 4

Q1 Choose the correct answer:

(1) $\sqrt[3]{5\sqrt{5}}$ = ...

a) $\sqrt{5}$ b) $2\sqrt{5}$ c) $3\sqrt{5}$ d) $5\sqrt{5}$

(2) R – Q\ = ...

a) N b) Z c) Z^+ d) Q

(3) The slope of the straight line passes through (3 , 0) and (5 , –1) is

a) –2 b) 2 c) $\frac{1}{2}$ d) $-\frac{1}{2}$

(4) If (2 , 1) satisfies the relation a X – Y = 3 , then a = ...

a) 2 b) 1 c) – 1 d) – 2

(5) The mean of the values 3 , 4 , 5 , 6 , 7 is............................

a) 3 b) 5 c) 6 d) – 5

(6) If 1 ∈] – 3 , X [, then X = ...

a) –1 b) 2 c) Zero d) 1

Q2 Complete each of the following:

1) If $X \in Z^-$, $X^2 = 3$, then $(X + \sqrt{3})^2$ = ...

2) If $-2 < X < 2$, then $2X + 3 \in$ the interval ....

3) If $X^2 = 5$, then $(X+\sqrt{5})^2$ = ...or ....

4) The order of the median of frequency distribution is 40, then the total of frequency is ....

5) The mode of the values: 3, 5, 7 , 5 ,6 is..........................

Q3

A) Find the value in the simplest form:

$$\sqrt{18} + 3\sqrt[3]{\frac{1}{3}} - \sqrt{8} - \sqrt[3]{9}$$

B) A right circular cylinder its height is **20** cm, find its base radius length if its volume = $\frac{4}{9}$ the volume of a sphere its radius length 15 cm.

Q4

A) Find in $\mathbb{R}$ the S.S of the equation:

$\sqrt{5}$ X + 1 = 6 , then represent it on the number line.

B) If X = 2 + $\sqrt{3}$, Y = $\frac{1}{2+\sqrt{3}}$. Find the Value of: $\frac{(X+Y)^2}{2XY}$

Q5

A) Represent graphically the relation: **2 X – Y = 3**□

B) The following table shows the frequency distribution of the weekly wages of **50** workers in a factory:

Sets	5–	15–	25–	35–	45–	Sum
Frequency	7	10	12	13	8	50

✍Find in pounds the **arithmetic mean** for the worker's wages?

End of the questions

ALGEBRA – MODEL NO 5

Q1 *Choose the correct answer:*

(1) If $X \in [-2, 2]$, then $X^2 \in$ ....

a) $\{4\}$ b) $]0, 4[$ c) $[0, 4]$ d) $[-4, 4]$

(2) The multiplicative inverse of $(\sqrt{3} - 2)$ is ....

a) $\sqrt{3} - 2$ b) $2 - \sqrt{3}$ c) $\sqrt{3} + 2$ d) $-\sqrt{3} - 2$

(3) The S.S of the inequality $-2X \geq 6$ the interval ....

a) $[3, \infty[$ b) $]3, \infty[$ c) $]-\infty, 3[$ d) $]-\infty, -3]$

(4) If the upper boundary of a set is **30** , its length **10** then its center is............

a) 35 b) 25 c) 15 d) 20

(5) The slope of the straight line passing through (3,2) , (1,3) is

a) -2 b) 2 c) $-\frac{1}{2}$ d) $\frac{1}{2}$

(6) The **S.S** of the equation $\sqrt{2}\ X = 4$ in $\mathbb{R}$ is { ....}

a) $4\sqrt{2}$ b) $-2\sqrt{2}$ c) $2\sqrt{2}$ d) $\sqrt{2}$

Q2 *Complete each of the following:*

1) If the lowest boundary of a set is **4** and its center is **9**, then the upper boundary is.............

2) The slope of straight line which is parallel to Y- axis is.............

3) If $X \in Z$, number where $X < -\sqrt[3]{10} < X + 1$, then X = ...

4) If m (15 , 30) is the point of intersection for the two cumulative ascending and descending curve, then the median is.......................

5) A Cuboid its base area is $5\sqrt{2}$ cm^2, its height is $3\sqrt{2}$ cm, then its volume = ...

Q3

A) If $X = 2 + \sqrt{3}$, $y = \frac{1}{x}$, **find** in simplest form without using calculator the value of $X\,y - y^2$

B) Represent graphically the relation **y = 2 – 2 X** , if this straight line passing through the point (**4 , 2 a**) Find the value of a.

Q4

A) A metallic sphere with diameter **6** cm , its melted and convert to an circular cylinder its base radius is **3** cm. Find the height of the cylinder and its lateral area

B) Without using calculator, find in simplest form:

$$\sqrt{175} + 3\sqrt[3]{125} + \frac{35}{\sqrt{7}}$$

Q5

A) If [a – 3 , a + b] is solution of $2 \le X + 1 \le 8$, find the value of A^B

B) The following table shows the frequency distribution of the marks for **50** students in math test:

Sets	10 –	20 –	30 –	40 –	50–	Sum
Frequency	8	12	2k	9	k	50

Find: ① Value of K ② The asthmatic mean

End of the questions

ALGEBRA – MODEL NO 6

Q1 *Choose the correct answer:*

(1) (3 , 2) didn't satisfy the relation ....

a) X + Y =5 b) 3 Y – X =3 c) X + Y = 7 d) Y – X = 1

(2) The multiplicative inverse of $\frac{\sqrt{2}}{6}$ is ....

a) $\sqrt{3}$ b) $3\sqrt{2}$ c) $2\sqrt{3}$ d) $\sqrt{6}$

(3) If A – B = $3\sqrt{5}$, A + B = $\sqrt{5}$, then A = ...

a) $4\sqrt{5}$ b) $3\sqrt{5}$ c) $\sqrt{5}$ d) $2\sqrt{5}$

(4) If the slope of straight line **a X + b Y + c = 0** is undefined then......

a) a = b b) a = 0 c) b = 0 d) a = – b

(5) If the mode of the values **4 , 5, a –2 , 3** is **3** , then **a =** ....

a) 2 b) 3 c) 4 d) 5

(6) [1 , 2] ∩] 2 , 5] = ...

a) ∅ b) {2} c) {0} d) { 1 , 5 }

Q2 *Complete each of the following:*

1) If **X** ∈ $\mathbb{R}^+$, **X > X²** , then **X** ∈] .... , ... [

2) If the surface area of sphere = 9 π cm², then its diameter =.........

3) If $(\sqrt{x} + \sqrt{3})(\sqrt{x} - \sqrt{3}) = 8$, then x =...........

4) If the point (2 , a) satisfy the relation 3X + y = 8 , then a =......

5) If $\sqrt[3]{x} = \sqrt{4}$ then X = ...

Q3

A) Represent graphically the relation **y = 4 – X** , from the graph find the intersecting points with two axis.

B) Without using calculator, find in simplest form:

$$4\sqrt{8} + 12\sqrt{\frac{1}{2}} - (\sqrt{2})^3$$

Q4

A) Find the solution set for the inequality $-1 \le 3x + 2 \le 8$ in $\mathbb{R}$ and represent it on the number line.

B) A right circular cylinder its height **20** cm, find the length of its base radius if its volume equals $\frac{4}{9}$ volume of sphere with radius 15 cm

Q5

A) If the slope of straight line which passes through the points (3, 3) , (K , 5) , (– 1 , m) equals 2, **find** the value of **K + m**

B) Find the arithmetic mean for the frequency distribution:

Sets	10–	20–	30–	40–	50–	Sum
Frequency	3	4	6	5	2	20

End of the questions

ALGEBRA – MODEL NO 7

Q1 *Choose the correct answer:*

(1) $[5, 7] - \{5\} =$ ....

a) $]5, 7[$ b) $]5, 7]$ c) $[5, 7[$ d) $\{6, 7\}$

(2) $\sqrt{16} + \sqrt[3]{-64} =$ ....

a) 8 b) Zero c) -8 d) ± 8

(3) The square with side length $\sqrt{5}$ it's Area= ....cm^2

a) 5 b) $\sqrt{5}$ c) 10 d) 25

(4) The irrational number lies between 3 , 4 is ....

a) 3.5 b) $\frac{1}{8}$ c) $\sqrt{7}$ d) $\sqrt{10}$

(5) The volume of a sphere = $\frac{4}{3}\pi$ Cm^3, its radius length =..... cm

a) 1 b) 2 c) $\frac{4}{3}$ d) $\frac{3}{4}$

(6) The additive inverse of the number $(1 - \sqrt{6})$ is ....

a) $1 + \sqrt{6}$ b) $1 - \sqrt{6}$ c) $-1 - \sqrt{6}$ d) $-1 + \sqrt{6}$

Q2 *Complete each of the following:*

1) The intersection point of the ascending and descending cumulative frequency curves determines the ...on the set – axis.

2) The arithmetic mean of the values: **2 , 6 , 5 , 7 , 10** is ....

3) $(\sqrt{6} + 1)^2 = 7 +$ ....

4) The S.S of equation $X^3 + 5 = $ **13** in $\mathbb{R}$ is ....

5) The order of the median = $\frac{\text{.........................}}{2}$

Q3

A) Find **S.S** in $\mathbb{R}$ in the form of an interval:

$$3 < 2X + 1 \leq 11$$

B) Find in the simplest form: $\sqrt{32} - \sqrt{72} + 6\sqrt{\frac{1}{2}}$

Q4

A) A right circular cylinder its height is **10** cm, its base radius length **7** cm. Find its volume.

B) If $X = \sqrt{7} - \sqrt{5}$, $Y = \sqrt{7} + \sqrt{5}$

Find the Value of: $\frac{x+y}{x\,y-1}$

Q5

A) If (3 , K) satisfies the relation 3 X + 2 Y = 7. **Find** the value of K

B) The following table shows the marks of **40** students in one month in math.

Sets	5 –	15 –	25 –	35 –	45 –	Sum
Frequency	7	10	12	13	8	50

✍ Find the arithmetic mean for that frequency distribution?

End of the questions

ALGEBRA – MODEL NO 8

Q1 *Choose the correct answer:*

(1) The remainder of subtracting (– 3 X) from 3 X equals ....

a) Zero b) 6 X c) – 6 X d) $-39X^2$

(2) The straight line Y + 2 x = 4 intersect X- axis in point ....

a) (0 , 2) b) (2 , 0) c) (4 , 0) d) (0 , 4)

(3) If $\sqrt[3]{x^2} = 4$, then x = ...

a) 8 b) ± 8 c) 4 d) ± 4

(4) The S.S. in $\mathbb{R}$ for the equation $X^2 - 4 = 0$ is.............

a) {2} b) {–2} c) { 2 , – 2 } d) $\varnothing$

(5) Number of edges of two adjacent faces of a cube equal...........

a) 6 b) 7 c) 8 d) 12

(6) $\sqrt{5} + \sqrt{5} + \sqrt{5} =$ ....

a) $5\sqrt{5}$ b) $\sqrt{15}$ c) $\sqrt{45}$ d) 15

Q2 *Complete each of the following:*

1) The mean for the values **a + 1 , a , a – 1** is **6** , then a = ...

2) If $X < -\sqrt[3]{35} < X + 1$, x is an integer number, then x = ...

3) If **(– b , b)** satisfy the relation **y + 3 x = 8** , then **b** = ...

4) The volume of cube = **125** cm^3 , then its total area = ...cm^2

5) The additive inverse of $\sqrt{5}$ **– 2** in simplest form is.............

Q3

A) Find the value of X :

$$X \sqrt[3]{2} = 2\sqrt[3]{54} + 3\sqrt[3]{-128} + 6\sqrt[3]{16} - 6\sqrt[3]{\frac{1}{4}}$$

B) If $X = \sqrt[3]{3} + 1$, $Y = \sqrt[3]{3} - 1$. **Find** the value of $(x + y)^3$

Q4

A) Represent graphically the relation **y = 6 − x ,** if the straight line passing through the point **(k , 2 k)** find the value of **k** ?

B) If X = [− 1 , 4] , y = [3 , ∞ [, by using the number line find each of the following :

① $X \cup y$ ② $X \cap y$ ③ $X - y$

Q5

A) **Find** the solution set for the inequality in ℝ and represent it on the number line:

$$-5 \le -2 + 3X \le 1.$$

B) A right circular cylinder its volume is 40 π cm^3, its height is 10 cm, **Find** its lateral area in the form by π .

End of the questions

Algebra – Model No 9

Q1 *Choose the correct answer:*

(1) $(1-\sqrt{5})^2 + \frac{1}{\sqrt{5}} =$ ....

a) 2 b) 5 c) -4 d) 6

(2) If the lowest boundary of a set is **6** and upper boundary is **10**, then its center is.............................

a) 4 b) 6 c) 8 d) 16

(3) The solution set of the equation $\mathbf{X^2 + 9 = 0}$ in $\mathbb{R}$ is ....

a) $\{-3\}$ b) $\{3, -3\}$ c) $\{-9\}$ d) $\varnothing$

(4) If the median for the values: $X+1$, $X-3$, $X+5$ is **7**, then X = ...

a) 2 b) 6 c) 7 d) 10

(5) $[-2, 2] \cap Z^+ =$ ....□

a) $\{1, 2\}$ b) $[1, 2]$ c) $\{0, 1, 2\}$ d) $[-2, 1]$

(6) $\sqrt{16+9} = 4 +$ ....

a) 1 b) 3 c) 4 d) 5

Q2 *Complete each of the following:*

1) Slope of straight line passing through **A(5,4)** , **B(–1,1)** equals......

2) If volume of cube is $\mathbf{3\sqrt{3}}$ cm^3, then sum of its edges = ... cm

3) The arithmetic mean for the values: **6 , 4 ,3 , 7** is ....

4) The mode for the values: **5 , 1 , 9 , 4 , 1** is ....

5) If **(1 , K)** satisfies the relation: **2 X + 3 Y = 1**, then **K** = ...

Q3

A) Find in $\mathbb{R}$ the **S.S** of the inequality and represents the solution on the number line:

$$1 \le 3 - 2X \le 5$$

B) If the volume of right circular cylinder is **360** π, and its height **10** cm. find the length of its base radius and calculate its lateral area in term of π.

Q4

A) If $X = \sqrt{13} + \sqrt{6}$, $XY = 1$

Find the value of the expression: $X^2 - 49Y^2$

B) Simplify to the simplest form:

$$\sqrt{175} - \sqrt[3]{16} + \frac{35}{\sqrt{7}} + 2\sqrt[3]{8}$$

Q5

A) If the slope of the straight line passing through **D (4 , 3) , E (5 , n)** equals **3**. Find the value of **n**?

B) The following table shows the marks of **15** students in one month in math.

Sets	1 –	3 –	5 –	7 –	9 –	Sum
Frequency	2	3	X	4	1	15

✍ Find: ① The arithmetic mean ② Find value of X

End of the questions

ALGEBRA – MODEL NO 10

Q1 Choose the correct answer:

(1) If the edge length of cube is **10** cm, then its total area ……… cm^2

a) 100 b) 400 c) 600 d) 1000

(2) The median for the values: **1 , 9 , 6 , 8** is …………

a) 6 b) 7 c) 8 d) 9

(3) The additive inverse of $\frac{10}{\sqrt{2}}$ in the simplest form is …….

a) $5\sqrt{2}$ b) $-5\sqrt{2}$ c) $\frac{\sqrt{2}}{10}$ d) $\frac{\sqrt{2}}{5}$

(4) If the lowest boundary of a set is **3** and its center is 6, then its upper boundary is…………………………

a) Zero b) 6 c) 9 d) 12

(5) $\{8, 9, 10\} -]8, 10[$ = ………….

a) $\{8, 10\}$ b) $\varnothing$ c) $\{9\}$ d) N

(6) If the arithmetic mean for the values: 3 , m , 4 is **5**, then m = ……

a) 2 b) 7 c) 8 d) 15

Q2 Complete each of the following:

1) $\sqrt{9} + \sqrt{16} = \sqrt{\ldots\ldots\ldots}$

2) The slope of straight line is perpendicular to Y-axis equals………

3) If the median order of a grouped frequency distribution is 10, then the sum of the frequencies is …………….

4) If the mode for the values: X – 3 , X , X – 3 is 3, then X = ………

5) If the ordered pair (–2 , 5) satisfies the relation X + K Y = 3, then K= ……….

Q3

A) Find in $\mathbb{R}$ the **S.S** of the inequality and represents the solution on the number line:

$$\frac{x+1}{\sqrt{3}-\sqrt{5}} \leq \sqrt{3} + \sqrt{5}$$

B) Find the radius length of sphere whose volume 288 π cm^3, then find its surface area in term of π .

Q4

A) If $X = \sqrt{5} - 2$, $X\,Y = 1$

① Prove that: X , Y are two conjugate numbers

② The value of: $X^2 + Y^2$

B) Simplify to its simplest form:

$$\sqrt{50} + \frac{4}{\sqrt{2}} - 10\sqrt{\frac{1}{2}} + 2\sqrt{18}$$

Q5

A) If the slope of the straight line passing through (3 X , 5) , (2 , 4 X) equals **5**. Find the value of X

B) The following table shows the frequency distribution of the marks for **40** students in math test:

Sets	4 –	8 –	12 –	16 –	20–	**Sum**
Frequency	5	9	X	8	6	**40**

Find: ① Value of X ② The asthmatic mean

End of the questions

Model exam (Alg.)

[1] Complete :

a) $\frac{3-x}{x+2}$ = zero if x = ……………………

b) The degree of the algebraic term $6x^2y^3$ is………………………

c) The additive inverse of the number $\left|\frac{-3}{5}\right|$ is ……………………..

d) -8 X exceeds 5 X by …………………

e) $(12x^3 \div 4x) \times$ ………………= $6x^4$.

---

[2] Choose the correct answer :

1) $\frac{-2}{5} \times n = 1$ Then n = ……………………..

a) $\frac{5}{2}$ b) $\frac{-5}{2}$ c) $\frac{2}{5}$ d) $\frac{-2}{5}$

2) The rational number ……………….. lies in half way between $\frac{1}{2}$ and $\frac{7}{8}$

a) $\frac{11}{16}$ b) $\frac{5}{8}$ c) $\frac{3}{4}$ d) $\frac{1}{2}$

3) $\frac{3}{x+2}$ is a rational number then x ≠ …………………..

a) zero b) -3 c) 2 d) -2

4) Express $\frac{4}{11}$ as a decimal ……………………………..

a) 0.36 b) 0.363 c) 0.36 d) 0.036

5) If $\frac{x}{y} = \frac{2}{5}$ Then : 5 x – 2 y = …………………………

a) $\frac{2}{5}$ b) $\frac{5}{2}$ c) 1 d) zero

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[3] a) **Add :** 3 x – 5 y – 6 and 3 y + 2 x + 5

b) Use distributive property to find : $\frac{5}{9} \times 11 + \frac{5}{9} \times 8 - \frac{5}{9}$

c) The length of a rectangle is 5 x cm and its width is 3x cm . calculate its area .

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[4] a) Subtract : $6x^2 + 2x - 5$ from $2x^2 - 3x + 4$

b) If $a = \frac{3}{4}$, $b = -\frac{1}{2}$ find the value of $(a + b) \div (a - b)$

c) Find three rational numbers between $\frac{1}{2}$, $\frac{1}{3}$

Exam (1)

Choose the correct answer

1	*The algebraic term* $7xy^3$ *whose degree is* ………………… (1 , 2 , 3 , 4)
2	*If the area of a rectangle is* $18x^3\ cm^2$*. And its length* = $6x^2$ *cm.,* *then its width* = …………… *cm.* ($3x$, $3x^2$, $3x^5$, 3)
3	*If* $x^2 = 16$, $y^2 = 9$ *and* $xy = 12$ *, then* $(x-y)^2$ = ………… (49 , 165 , −1 , 1)
4	*If* $\frac{x+3}{x-7} = 0$ *, then the value of* x *is* ……….. (3 , −7 , −3 , 7)
5	*If* $(x-6)(x+6) = x^2 + k$ *, then* k = ……….. (−10 , 36 , 10 , −36)
6	*The highest common factor of the expression* $3x^2y - 6x$ is ……….. ($3x$, $6x$, $3xy$, $xy - 2$)
7	*If* $5a = 45$, $ab = 1$ *, then* b = ……… ($\frac{1}{9}$, 5 , $\frac{1}{5}$, 9)
8	$(x^2 + x) \div x$ = …………. *Where* $x \neq 0$ (*zero* , x , $2x+1$, $x+1$)
9	*the perimeter of the rectangle whose dimensions are* $(2x+1)$ *cm.* *and* $(3-2x)$ *cm. is* ……….. *cm* ($2x$, 4 , x , 8)
10	$(-3x) \times (-5y)$ = ………. ($-15xy$, $-8xy$, $8xy$, $15xy$)
11	*The number* $\frac{x+3}{x-7}$ *is rational number if* $x \neq$ …………
12	$12x^2y^3 \div 4xy$ = ………….
13	*The multiplicative inverse of* $1\frac{2}{3}$ *is* ………………
14	*If the order of the median of the values is fourteenth , then the number of these values is* ……….
15	$5x^2 + 15xy = 5x$ (…… + ……)

Answer the following questions

1	*If* $x + y = 5$ *, then the numerical value of* $x^2 + 2xy + y^2$ ....
2	*Divide* : $21x^2y + 9xy^2 - 12x^2y^3$ *by* $3xy$ *where* $(xy \neq 0)$ ....
3	*simplify* : $(x + 2)^2 - 4x$ *, then find the numerical value of the result when* $x = 1$ ....
4	*Subtract* : $-x^2 + y^2 - 3xy$ *from* $x^2 - 2xy + 3y^2$ ....
5	*Factorize the expression by identifying the H.C.F* : $12x^2y^3 + 18xy^2$ ....
6	*Use the distribution property to find* : $\frac{5}{17} \times 10 + \frac{5}{17} \times 23 + \frac{5}{17}$ ....
7	*If the mode of the values* $a + 2$, $a + 1$, $a + 3$, $a + 2$ *equals* 12 , *then* a = ……

Exam (2)

Choose the correct answer

1	The middle term in the expansion of $(2x-5y)^2$ is ……………… ($-10x^2y^2$, $10x^2y^2$, $20xy$, $-20xy$)
2	The degree of the algebraic expression : $3x^2+5xy^2+6y^2$ is …….. (zero , second , third , fourth)
3	The additive inverse of the number $\frac{1}{3}$ is ………… ($\frac{3}{10}$, 0.3 , 3 , $-0.\dot{3}$)
4	The base length of a triangle is $2x$ cm. and its height is $6y$ cm., then its area Is ………….. cm^2 ($12xy$, $8xy$, $6xy$, $4xy$)
5	If $a\times\frac{b}{3}=\frac{a}{3}$,then $b=$ ……… ($\frac{a}{3}$, 0 , a , 1)
6	$(15x^4+5x^3)\div 5x^3=$ ………….. ($3x^2+x$, $5x^2+1$, $3x+1$, $4x^4$)
7	The multiplicative inverse of $\left(\frac{1}{2}\right)^0$ is ……… (2 , -2 , 1 , -1)
8	If the arithmetic mean of 6 values is 12 ,then the sum of theses values $=$ ………… (2 , 6 , 18 , 72)
9	$x+x+x=$ ………. ($3x^3$, $3x$, x^3 , $x+3$)
10	the simplest form of the expression $(x-4)(x+4)+16$ is ………. (x^2+4 , x^2-4 , x^2 , 4)
11	The rational number which hasn't a multiplicative inverse is ………..
12	The reminder of subtracting $-7x^2$ from $2x^2$ is …………..
13	The H.C.F of $12x^3+6x^2$ is …………
14	$9a^7b^4=$ …………$\times a^7b$
15	If $\frac{x}{y}=1$, then $5x-5y=$ ……………
16	$100\,\%-\frac{1}{4}=$ …………

Answer the following questions

1	*find three rational numbers between* : $\frac{3}{5}$, $\frac{1}{4}$
2	*simplify to the simplest form* : $(x+5)^2+(x+2)(x-2)$
3	*Use the distribution property to find* : $\frac{7}{12}\times\frac{23}{45}+\frac{17}{12}\times\frac{23}{45}-2\times\frac{23}{45}$
4	*What is the decrease of* : $3y^2-2xy+x^2$ *than* $3x^2-5xy+y^2$
5	*Factorize by taking out the H.C.F* : $3x^2y-6xy^2+9xy$
6	*if the arithmetic mean of the values* : $8, 7, 5, 6, 4, k+5$ *is* 6 , *find* k
7	*If* $x+3$ *is one factor of* $2x^2+3x-9$, *find the other factor*

Exam (3)

Choose the correct answer

1	.... *Is a terminating decimal* $\left(\frac{7}{20} , \frac{2}{11} , \frac{7}{11} , \frac{1}{3} \right)$
2	*If* $(x+y)^2 = 26$ *and* $x^2 + y^2 = 20$ *, then* $xy =$ .... (3 , 6 , 9 , 12)
3	*The multiplicative inverse of the number* .... *Is itself* (-1 , 0 , 2 , 3)
4	$12x^2 \div (-x) =$ .... ($12x$, 12 , $-12x$, -12)
5	*Half of* 2^{100} = ... (2^{98} , 2^{99} , 4^{100} , 2^{50})
6	*the degree of the algebraic expression* : $3x^2y^2 + 5x^2y - 2xy$ *is* .... (*second* , *third* , *fourth* , *fifth*)
7	*if half of a number is* 30 *,then* $\frac{3}{4}$ *of this number is* .... (48 , 42 , 40 , 45)
8	*if* $x + y = 7$ *, then* $5x + 5y =$ .... (7 , 25 , 5 , 35)
9	$(6x \div x) +$ .... $= 0$ (where $\neq 0$) ($5x$, $-5x$, $6x$, -6)
10	If $(x-3)(x+3) = x^2 + K$, then $K =$ .... (-9 , 3 , 6 , 9)
11	$5x^2 + 15xy = 5x$ (... ... + ...)
12	$\frac{4}{5}$ = ...%
13	$(3x+2)(x-4) = 3x^2$ .... -8
14	$(x-7)(x+7) =$ ....
15	*The coefficient of the algebraic term* $(-5xy^2)$ *is* ....
16	$(3x-y)(2x+5y) = 6x^2 + 13xy$ ....

Answer the following questions

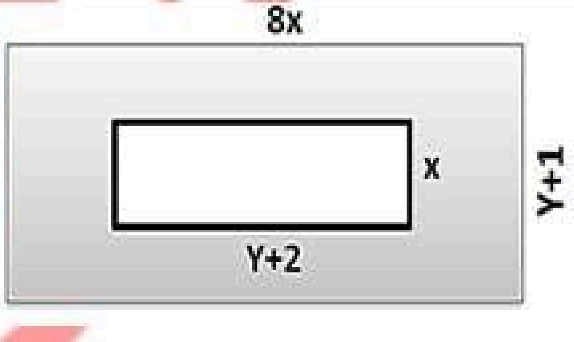
1	*If the median of the values* $a+3$, $a+2$, $a+4$ *is* 8 , *find the value of* a ....
2	*find a rational number lying at one third way between* $\frac{4}{7}$, $1\frac{3}{4}$ *from the side of the smaller number.* ....
3	*What is the increase of* $7x+5y+z$ than $2x+6y+z$ ....
4	*Simplify to the simplest form:* $(5x-6)^2+60x-36$ ....
5	*Divide :* $6x^3-2x^2$ *by* $2x$, $x \neq 0$ ....
6	*find 2 rational numbers lying between :* $\frac{1}{2}$ *and* $\frac{4}{3}$, *one of them is rational , the other is an integer* ....
	prove that the number $\frac{5}{12}$ *lies between* $\frac{1}{3}$ *and* $\frac{1}{2}$ ....

Exam (4)

Choose the correct answer

1	*if* $x + 2y = 5$, *then* $x + 2(3 + y) = \ldots\ldots\ldots$ (5 , 6 , 11 , 15)
2	*if* $\frac{\lvert x \rvert}{5} = 3$, *then* $x = \ldots\ldots\ldots$ (5 , 10 , 15 , ± 15)
3	$\frac{1}{2} \times \frac{2}{3} \times \frac{3}{4} \times \ldots\ldots\ldots \times \frac{99}{100} = \ldots\ldots$ ($\frac{1}{2}$, $\frac{3}{4}$, $\frac{99}{100}$, $\frac{1}{100}$)
4	*If the arithmetic mean of the marks of 5 studesnts is 20 , then the sum of their marks is* .... (100 , 4 , 5 , 20)
5	*if* $\frac{5}{7} + \frac{x}{2} = \frac{25}{35}$, *then* $2x = \ldots\ldots\ldots$ (2 , $\frac{5}{7}$, *zero* , $\frac{11}{2}$)
6	$(15x^4 + 5x^3) \div 5x^3 = \ldots\ldots\ldots$ ($3x^2 + x$, $3x^2 + 1$, $3x + 1$, $4x^4$)
7	*If 2b is the edge length of a cube , then its volume is* .... ($8b$, $2b^3$, $8b^3$, $6b^3$)
8	*the additive inverse of the number* $x + 2$ *is* .... ($x - 2$, $-x - 2$, $2 - x$, 2)
9	*A rectangle , its length* $= 4x$ *cm . and its width* $= 3x$ *cm. , then its area* $= \ldots\ldots\ldots$ ($7x$, $12x$, $12x^2$, $14x$)
10	*the multiplicative inverse of the number* $3\frac{2}{5}$ *is* .... ($-3\frac{2}{5}$, $3\frac{2}{5}$, $\frac{17}{5}$, $\frac{5}{17}$)
11	If $(2x + y)^2 = 4x^2 + kxy + y^2$, then $k = \ldots\ldots\ldots$
12	*The degree of algebraic term* $7^2 x y^2$ is ....
13	*if* $\frac{a}{b} = \frac{1}{2}$, then $2a - b = \ldots\ldots\ldots$
14	*The number 1.25 in the form of* $\frac{a}{b}$ *is* ....
15	$6x^2y^3 \times \ldots\ldots\ldots = 24x^4y^6$
16	$\mathbb{Q}^+ - \mathbb{Q}^- = \ldots\ldots\ldots$

Answer the following questions

1	*find the sum of* : $5x + 2y - 1$ *and* $2x - 5y + 3$
2	*find The arithmetic mean of the values* $2 - a$, 4 , 1 , 5 , $3 + a$
3	*Find four rational numbers between zero and* $\frac{3}{5}$
4	*Find the value of K which makes the expression* : $x^2 + 5x + K$ *divided by* $x + 2$
5	1 , 1 , 2 , 3 , 5 , 8 , ... (*in the same pattern*)
6	*if* $x + 5y = 6$, $z = 2$, *find the numerial value of* $x + 5(y + z)$
7	*Find the area of shaded part* 

Exam (5)

Choose the correct answer

1	the multiplicative inverse of $0.\dot{4}$ in the simplest form is .... ($\frac{4}{9}$, $\frac{9}{4}$, $\frac{2}{5}$, $\frac{5}{2}$)
2	if $\frac{a}{7} > \frac{b}{9}$, then 9 a .... 7 b ($>$, $<$, $\leq$, $=$)
3	If $x = -1$, then the numerical value of the expression $(x+1)^2$ is .... (0 , 1 , 2 , 3)
4	The necessary condition to make $\frac{7}{2x-10}$ a rational number if $x \neq$ .... (-7 , 5 , -5 , 10)
5	The degree of the algebraic term $(2y^2x)^2$ is .... (3 , 4 , 5 , 6)
6	if $(x+2)(x-2) = x^2 + kx - 4$, then $k =$ .... (-4 , zero , 4 , 8)
7	The length of a rectangle is $2x$ cm. and its width is y cm. , then its perimeter = ... ($2xy$, $3xy$, $2x+y$, $4x+2y$)
8	$-3(y+3) =$ .... ($-3y+6$, $-3y-9$, $-3y-6$, $-3y$)
9	if $2x = 10$, then $\frac{3}{5}x =$ .... (25 , 15 , 5 , 3)
10	If $\frac{4}{6} = \frac{12}{x}$, then $x + 2 =$ .... (18 , 20 , 16 , 3)
11	the arithmetic mean of the values 5 , 4 , 8 , 3 and 10 is ....
12	If three times a number is 15 , then fifths this number is ....
13	The additive identity element in $\mathbb{Q}$ is ....
14	The median of the values : 5 , 9 , 7 , 4 , 3 , 8 is ....
15	$2\frac{1}{5} \times$ .... $= 1$
16	The result of subtracting $2x$ from $-3x$ is ....

Answer the following questions

1	1 , 4 , 9 , 16 , ………… , ………… (*in the same pattern*)
2	*Divide* : $14x^2y - 35xy^2 + 7xy$ *by* $7xy$ …………………………………………………………… ……………………………………………………………
3	*If the arithmetic mean of the numbers* : 8 , 7 , 5 , 9 , 4 , 3 , $k + 4$ *is* 6 , *then find the value of* k …………………………………………………………… ……………………………………………………………
4	using the distributive property to find : $\frac{-3}{7} \times 8 + 5 \times \frac{-3}{7} + \frac{-3}{7}$ …………………………………………………………… ……………………………………………………………
5	*If the area of a rectangle is* $3x^2 + 7x + 2$ *and its length is* $3x + 1$, *find its width* ……………………………………………………………
6	*find* : $(x + 2)^2 - 4(x + 1)$, *then find the numerical value of the result when* $x = 2$ …………………………………………………………… ……………………………………………………………
7	*The greatest negative number is* ………………

Exam (6)

Choose the correct answer

1	*the rational number that lies half the way between* $\frac{1}{2}$, $\frac{3}{4}$ *is ....* ($\frac{1}{4}$, $\frac{1}{5}$, $\frac{5}{8}$, $\frac{1}{6}$)
2	*If* $\frac{x}{y} = \frac{2}{3}$ *, then* $\frac{3x}{2y}$ = ... ($\frac{1}{5}$, $\frac{3}{2}$, $\frac{9}{4}$, 1)
3	*the algebraic term :* $3\,x\,y^m$ *is of the fifth degree , then* $m =$ .... (4 , 5 , 2 , 3)
4	*if* $\frac{3}{a} < \frac{3}{b}$ *, where* $ab > 0$ *, then a .... b* ($>$, $<$, $\leq$, $=$)
5	*If 6 , 5 , 12 and x are proportional numbers then x = ...* (8 , 10 , 5 , 7)
6	*if the algebraic expression :* $ax^3 + 4x^2 + 3x$ *is of the second degree , then* $a =$ .... (1 , 3 , −2 , zero)
7	*If the arithmetic mean of the numbers : 5 , 8 , 7 , k , 9 , 3 is 6 , then k = ...* (3 , 4 , 5 , 6)
8	$0.7 + 0.\dot{3} =$ .... (1 , 3.7 , $0.\dot{3}\dot{7}$, $1\frac{1}{30}$)
9	$(3a + 2b)^2 = 9\,a^2 +$ .... $+ 4\,b^2$ (6 ab , 12 ab , 24 ab , 36 ab)
10	$(-5x) + (-3x) - x =$ .... ($-9x$, $9x$, $8x$, $-8x$)
11	$5x + 5y = 30$ *, then* $x + y =$ ....
12	*If the arithmetic mean of the numbers :* 8 , 7 , 5 , 9 , 4 , 3 , $k + 4$ *is 6 , then the value of* $k =$ ....
13	*The additive inverse of* $\left(\frac{-3}{5}\right)^0$ *is ....*
14	*the mode for the values :* 2 , 4 , $k - 3$ *is 4 , then* $k =$ ....
15	$(x - 5)($ .... $) = x^2 - 25$
16	*the number* $\frac{x-4}{x+4}$ *is a rational number if x ....*

Answer the following questions

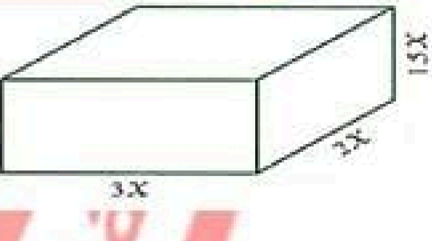
1	*Factorize by identifying the H.C.F* : $4x^3y^3 - 6x^2y^2 + 2xy$ ....
2	*Find three rational numbers between* : $\frac{1}{2}$, $\frac{1}{3}$ ....
3	12% *of* 500 *kg.* = ... *kg.*
4	*find the quotient of dividing* : $6x^2 + 13xy + 6y^2$ *by* $2x + 3y$, $(2x + 3y \neq 0)$ ....
5	*If the arithmetic mean of the values* : 8 , *k* , 7 , 5 *is* 6 , *find value of k* ....
6	*Use the properties of addition of rational numbers to find* $\frac{5}{4} + \left(\frac{-13}{5}\right) + \left(\frac{-25}{4}\right) + \frac{28}{5}$ ....
7	*If* $x = \frac{1}{2}$, $y = \frac{-2}{3}$, $z = 2$, then find the value of $\frac{y-z}{x}$ ....

Exam (7)

Choose the correct answer

1	$\frac{y^5}{y^3} + y^2$ = ……………………. , where $y \neq 0$	(y^6 , y^5 , $2y^2$, $2y^3$)
2	$\lvert -\frac{3}{5} \rvert$ …………… *zero*	($<$, $=$, $>$, $\leq$)
3	*The rational* $\frac{x}{-3}$ *is positive if* x …………..	(<0 , >0 , ≤ 0 , ≥ 0)
4	*Fifths the number* 5^{10} = ………	(5^9 , 5^5 , 5^{11} , 3^9)
5	*the rational number that lies on third of the way between 8 and 12 from the smaller is* ……….	($8\frac{1}{3}$, $9\frac{1}{3}$, 10 , $10\frac{2}{3}$)
6	*if* $(x+4)(x-3) = x^2 + m - 12$, *then* $m =$ …………	($-x$, x , $-7x$, $7x$)
7	*The decrease of* $3x$ *than* $4x$ *is* …………….	(1 , x , -1 , $-x$)
8	*The number of all rational numbers that exist between* $\frac{2}{5}$ *and* $\frac{4}{5}$ *is* ………..	(1 , 2 , 3 , *infinite number*)
9	*the degree of the absolute term is* ……..	(1 , 2 , 0 , 3)
10	*the additive inverse of* $x+2$ *is* ………..	($x-2$, $-x-2$, $2-x$, 2)
11	*The multiplicative identity element in* $\mathbb{Q}$ *is* ……………….	
12	*if the mode for the values* : 2 , 4 , $k-3$ *is* 4 , *then* $k =$ ………..	
13	*If* $x + \frac{3}{x} = 4 + \frac{3}{4}$, *then* x = …………………..	
14	*if* $(x-y)(3x+2y) = 3x^2 + kxy - 2y^2$, *then* k = ……	
15	*The order of the median for the values* : 4 , 8 , 7 , 5 , 3 *is* …………	
16	$a(a+b) - b(a+b) = (a+b) \times$ ……………	

Answer the following questions

1	*if the ratio* $x : 25$ *equals* $2 : 5$ *, then* $x =$ …………………
2	*Add* : $2x - 6z + y$, $3y + 2z - 5x$ ………………………………………………………………………… …………………………………………………………………………
3	*simplify* : $(a-4)^2 + 8(a-2)$ ………………………………………………………………………… …………………………………………………………………………
4	*Factorize by taking H.C.F* : $9a^5 + 12a^4 - 3a^3$ ………………………………………………………………………… …………………………………………………………………………
5	*Divide* : $x^2 + 6y + 5$ *by* $x + y$ *where* $(x + y \neq 0)$ …………………………………………………………………………
6	$\mathbb{Q}^+ \cap \mathbb{Q}^- =$ …………
7	*Find the volume of opposite figure* ………………………………………………… ………………………………………………… 

Exam (8)

Choose the correct answer

1	$if\ (x+y)^2 = 15\ , x^2 + y^2 = 7\ , then\ xy =$ ………	(8 , 22 , 6 , 4)
2	$the\ number\ of\ integers\ lying\ between\ \frac{3}{5}\ , \frac{8}{7}\ is$ ………	(0 , 1 , 2 , infinite number)
3	$3x\,(2x+5y) = 6x^2 +$ ………….	($6x^2$, $15x^2$, $15y^2$, $15xy$)
4	$if\ \frac{2}{3}\ lies\ at\ the\ middle\ of\ the\ way\ between\ x\ and\ \frac{1}{2}\ , then\ x =$ ……..	($\frac{1}{3}$, $\frac{3}{4}$, $\frac{5}{6}$, $\frac{7}{8}$)
5	$the\ algebraic\ term:\ 2^3\, x^4\, y^2\ is\ of\ the$ ……….. $degree$	(nineth , sixth , seventh , eighth)
6	$the\ arithmetic\ mean\ for\ the\ values: 3\ , 5-x\ , 7+x\ is$ ………	(2 , 3 , 4 , 5)
7	$if\ the\ mode\ of\ the\ values: 7\ , 5\ , 2x+3\ , 5\ , 7\ is\ 5\ , then\ x =$ …………	(2 , −1 , 1 , −2)
8	$if\ \frac{3}{7}\ x = 42\ , then\ \frac{5}{7}\ x =$ ………..	(70 , 45 , 30 , 10)
9	$3xy + 6x =$ ……… $(y+2)$	(3 , $2x$, $3x$, $3y$)
10	$The\ additive\ inverse\ of\ the\ number\ \lvert -\frac{2}{3} \rvert\ is$ ……….	($\frac{2}{3}$, $\frac{3}{2}$, $\frac{-2}{3}$, 0)
11	$If\ \frac{a}{b} = 60\ , then\ \frac{a}{3b} =$ ……….	
12	$The\ multiplicative\ inverse\ of\ \frac{-7}{5}\ is$ ………………….	
13	$7x\,(x+5y) = 7x^2 +$ ……..	
14	$The\ sum\ of\ five\ numbers\ is\ 30\ , then\ the\ arithmetic\ mean\ of\ these\ numbers\ is$ ………..	
15	$(\frac{2}{3}x^2y) \times (\frac{3}{2}xy^2) =$ ………….	
16	$-\frac{4}{11} \times$ ………. $= 1$	

Answer the following questions

1	***Divide*** : $14x^3 - 28x^2 + 7x$ ***by*** $7x$ (***where*** $x \neq 0$) ....
2	***Add*** : $2a + 3b - c$ ***and*** $3a - 2b - 2c$ ....
3	***find*** $(6x - 3y)(6x + 3y)$ ....
4	***find the quotient of*** : $x^2 - 9x + 20$ ***by*** $x - 4$ (***where*** $x \neq 4$) ....
5	***the length of arectangle is*** $(2x + 5)$ ***and its width is*** $(3x + 2)$. ***Calculate its area*** ....
6	***if*** $\{1, 4, 3x\} = \{4, 12, 1\}$, ***then*** $x =$ ....
7	***find the mean and the median for the following numbers*** $7, 8, 2, 4$ ***and*** 9 ....

Exam (9)

Choose the correct answer

1	*which of the following algebraic term is like the algebraic term* $2x^2y$? ($2y^2x$, yx^2 , $2x^2$, x^2y^2)
2	$(4x^3y^2 - \dots\dots) \div 4xy = x^2y - 2$ *where* $xy \neq 0$ ($8x^2y$, $8x^2y^2$, $-8x$, $8xy$)
3	*the algebraic term :* 5^3 *is of the ………. degree* (*first* , *second* , *zero* , *fourth*)
4	*the rational number* $\frac{a}{b}$ *is positive if ……….* ($ab > 0$, $ab < 0$, $a + b = 0$, $a > b$)
5	$3x \times k = 12x^3$ *, then* $k = \dots\dots$ ($2x^4$, $6x^2$, $4x^2$, $4x$)
6	*The increase of* $6x$ *than* $-3x$ *equals …………* ($2x$, $9x$, $3x$, $-9x$)
7	$(3x+5)(x+2) = 3x^2 + \dots\dots\dots + 10$ (-7 , $11x$, $5x$, $7x$)
8	*if the order of the median of a set of values is fourth and fifth , then the number of these values is ……….* (10 , 12 , 11 , 16)
9	*if* $x^2 = 1$, $y^2 = 9$, $xy = 3$ *, then* $(x - y)^2 = \dots\dots$ (1 , 2 , 3 , 4)
10	*the coefficient of the algebraic term* $-xy^2$ *is ………* (1 , 2 , −1 , 3)
11	*If the arithmetic mean of the values :* 8 , k , 7 , 5 *is* 6 *, then* k = …………
12	*The additive identity element in* $\mathbb{Q}$ *is …….. , the multiplicative identity in* $\mathbb{Q}$ *is …….*
13	$\frac{-3}{5} + A = 0$ *then* $A = \dots\dots\dots$
14	*If the term* $3x^2y^{m+1}$ *from the* 6th *degree , then* $m = \dots\dots\dots\dots$
15	$-2a^2b \div 4ab = \dots\dots\dots\dots$ ($a \neq b \neq 0$)
16	*the multiplicative inverse of the number* $3\frac{2}{5}$ *is ……….*

Answer the following questions

1 *The most repeated value of a set of values is called* ....

2 *Divide :* $x^2 + 12x + 35$ *by* $x + 5$ $\quad$ (*where* $x \neq -5$)

....

3 *Factorize by identifying the H.C.F :* $3a\,(4a + 5b) - 2b\,(4a + 5b)$

....

4 *Add :* $3x - 5y + 2$, $2x + 5y - 2$

....

....

5 *Simplify to the simplest form:* $(x - 4)\,(x + 4) + 9$ *, then calculate the numerical value of the result when* $x = 5$

....

....

....

6 *if the arithmetic mean of :* $x - 1$, x , $x + 1$ *is 12 , find* x

....

....

....

7 *the following table shows the marks of a class in maths exam :*

marks	5	6	7	8	9	10
frequency	6	5	12	7	10	4

find the mode mark

Exam (10)

Choose the correct answer

1	*if* $\frac{7}{4x}$ *is a rational number , then* $x \neq$ .... (4 , zero , −4 , −7)
2	*if* $x - y = 3$, $x + y = 7$, *then* $x^2 - y^2 =$ .... (3 , 7 , 9 , 21)
3	*the multiplicative inverse of* $1\frac{2}{3}$ *is* .... ($\frac{2}{3}$, $\frac{3}{2}$, 1 , $\frac{3}{5}$)
4	*the number of integers lying between* $\frac{7}{3}$, $\frac{11}{6}$ *is* .... (zero , 1 , 2 , infinite number)
5	*The sum of the square two monomials a , b is* .... ($a^2 + b^2$, $(a+b)^2$, $2(a+b)$, $2ab$)
6	$\frac{7}{5} >$ .... ($\frac{14}{5}$, $\frac{14}{10}$, $\frac{5}{7}$, $\frac{21}{15}$)
7	*if* $\frac{2}{5}x = 10$, *then* $\frac{4}{5}x =$ .... (25 , 15 , 20 , 5)
8	*the reminder of subtracting* $-3a$ *from* $2a$ *is* .... ($5a$, $-5a$, a , $-a$)
9	$25x^3 + 15x^2 + 35x =$ .... $(5x^2 + 3x + 7)$ ($5x^3$, $5x^2$, $5x$, 5)
10	*if the mode of the values* : 5 , 7 , $x + 4$, 5 , 9 *is* 7 , *then* $x =$ .... (4 , 5 , 3 , 2)
11	*the order of the median for the values* : 4 , 12 , 9 , 8 , 2 *is* ....
12	*The highest common factor of the expression* : $21x^2 + 14x^3 - 7$ *is* ....
13	$12x^3y - 15xy^3 = 3xy\,(4x^2 -$ .... $)$
14	$\frac{3x}{5} + \frac{2x}{5} =$ ....
15	$(y-1)\,(y^2 + y + 1) =$ ....
16	*The number* $y + 5$ *hasn't a multiplicative inverse , then* $y =$ ....

Answer the following questions

1 *Simplify to the simplest form:* $\frac{6\,x^4\,y^2}{7} \times \frac{28\,x\,y^3}{3}$

....

2 *find the quotient of :* $x^2 - 2x - 8$ *by* $x - 4$ (*where* $x \neq 4$)

....

3

4 *subtract :* $4x^2 - 5x + 3$ *from* $5x^2 + 4x - 3$

....

....

5 *Divide* $21\,x^2\,y - 7\,x\,y + 35\,x\,y^3$ *by* $7\,x\,y$ (*where* $xy \neq 0$)

....

....

6 $\mathbb{Q} = \mathbb{Q}^+ \cup \ldots\ldots \cup \mathbb{Q}^-$

7 *the following table shows Ali 's marks in 6 mathematics exams*

Month	*Oct.*	*Nov.*	*Dec.*	*Feb.*	*Mar.*	*Apr.*
Mark	41	35	47	37	44	48

Find each of the median an the mean

Exam (11)

Choose the correct answer

1	*The number* $0.\dot{5}\dot{7}$ *as a rational number* ………… ($\frac{5}{9}$, $\frac{19}{33}$, $\frac{3}{7}$, $\frac{2}{3}$)
2	*the square of the sum of the two monomial a ,b is* ……….. (a^2+b^2 , $(a+b)^2$, $2(a+b)$, $2ab$)
3	*The smallest prime number is* …………….. (0 , 1 , 2 , 3)
4	$\frac{x^2+2xy}{x}$ = ………… *where* $x \neq 0$ ($x+2y$, x^3+2x^2y , x^2+2xy , 2)
5	*if* $\frac{a}{b}=\frac{1}{2}$, *then* $2a-b$ = ……… (1 , 0 , 3 , −1)
6	$7x$ *exceeds* $-5x$ *by* …………….. ($12x$, $2x$, $-2x$, $-2x^2$)
7	*if the arithmetic mean for the numbers* : 3 , 5 , *x is* 4 , *then* $x =$ ……….. (3 , 4 , 5 , 6)
8	*the median for the values* : 4 , 8 , 3 , 5 , 7 *is* ………. (3 , 4 , 5 , 7)
9	*The highest common factor of the expression*: $5x^2-5x$ *is* …………..
10	$\frac{x-9}{x-2}=0$, *then* $x =$ ……….. (9 , 2 , −9 , −2)
11	*The additive inverse of* $(-2)^3$ *is* ……………. (8 , −8 , 4 , 6)
12	*If* $\frac{a}{b}=0$, *then* $3ab =$ ……………. (*such that* $b \neq 0$) (3 , $3ab$, 0 , 1)
13	*twice the number* $2^{10} =$ ………….. (2^{11} , 2^9 , 4^{10} , 2^{20})
14	*The additive inverse of* $\left(\frac{-2}{3}\right)^2$ *is* ………..
15	*the coefficient of the algebraic term* $\frac{x^2y}{3}$ *is* ………..
16	*If* $(x-7)(x+7)=x^2-K$, *then* K = ……….

Answer the following questions

1	*if the median of the values* : $x+5$, $x+3$, $x+8$ *is* 9 , *find the value of x* ....
2	*Add* : $3x-2y+7$ *and* $-2x+2y-9$ ....
3	*Use the distribution property to find* : $\frac{7}{12}\times\frac{23}{45}+\frac{17}{12}\times\frac{23}{45}-2\times\frac{23}{45}$ ....
4	*If* $a=\frac{7}{4}$, $b=-\frac{1}{2}$, *find the value of the expression* $(a-b)\div(a+b)$ ....
5	*Simplify to the simplest form*: $(x+2)^2-(x+2)(x-2)$ ....
6	*Divide* : x^2+6x+5 *by* $x+5$ (*where* $x\neq-5$) ....
7	*the arithmetic mean of five values of sum* 45 *is* ....

1 Complete each of the following:

1) If $\frac{3}{7} \times (x) = \frac{3}{7}$ then x = ...
2) The algebraic term $2x^3y$ is of .... degree.
3) The mode of the values 5 , 3, 1, 3, 5, and 3 is ....
4) Zero ÷ (- 12) = ...
5) $\frac{1}{2}$ = ... % .

2 Choose the correct answer from the given ones:

1) $(x - 1)(x^2 + x + 1)$ = ...

a) $x^3 + 1$ b) $x^3 - 1$ c) $x^3 + 3$ d) $x^2 + 2x$

2) 0. 57 = ... %

a) $\frac{57}{100}$ b) $\frac{75}{99}$ c) $\frac{575}{1000}$ d) $\frac{19}{33}$

3) The arithmetic mean of the numbers 3, zero, 4, 6 and 7 is ....

a) 4 b) 5 c) 6 d) 7

4) The median of the values 2, 6, 8, 4, and 10 is ....

a) 4 b) 5 c) 6 d) 8

5) $\left|-\frac{7}{3}\right|$ .... zero.

a) > b) = c) < d) ≤

3 (a) Find the sum of : $3x^2 + 2x + 5$ and $2x^2 - 4x - 3$

(b) Factorize by taking the H. C. F :$5xy + 10xz$

(c) Divide : $9x^3y^2 - 3xy$ by $3xy$ where $xy \neq 0$

4 (a) Use the distribution property to find the value of:

$\frac{5}{11} \times 9 + \frac{5}{11} \times 4 - \frac{5}{11} \times 2$

(b) Find three rational numbers lying between: $\frac{1}{3}$, $\frac{1}{5}$

(c) Divide: $x^2 - 5x + 6$ by $(x - 3)$

5 The following table shows the marks of Mona in mathematics in 5 months:

month.	Sept.	Oct.	Nov.	Dec.	Jan.
Math.	30	40	35	42	50

(1) Represent the previous data by broken line graph.
(2) Find the difference between the greatest and smallest mark obtained by Mona.

1 Choose the correct answer:

1) The value of $|-7| + |-1| =$ ....

a) –8 b) 6 c) 8 d) - 6

2) 0. 57 = ...

a) $\frac{57}{100}$ b) $\frac{75}{99}$ c) $\frac{575}{1000}$ d) $\frac{19}{33}$

3) The algebraic term $2ab^2$ is of .... degree.

a) 1st b) 2nd c) 3rd d) 4th

4) The median of the numbers: 2, 8, 5, 7, 6, is ....

a) 5 b) 7 c) 8 d) 6

5) $\frac{2}{x-7} \in Q$ if $x \neq$ ....

a) 7 b) 2 c) 0 d) -2

2 Complete each of the following:

1) The coefficient of $4a^3b^2$ is ....

2) The multiplicative inverse of the rational number $3\frac{1}{2}$ is ....

3) The mode of the values 3 , 6, 3, 3, 6, 4, 3 is ....

4) The rational number lying at half way between $\frac{1}{3}$ and $\frac{3}{4}$ is ....

5) The arithmetic mean of the numbers: 2, 7, 6, 9, 16, 20 is ....

3 (a) Factorize the following by taking H. C. F. : $15x^3y^3 - 20x^2y^3 - 25xy$

(b) Find the quotient of : $\frac{16a^3b^2 - 24a^2b^2}{4a^2b}$ where $ab \neq 0$

4 (a) Using the properties of the rational numbers, find the value of:

$\frac{7}{12} \times \frac{23}{45} + \frac{17}{12} \times \frac{23}{45} - 2 \times \frac{23}{45}$

(b) Find three rational numbers between: $\frac{1}{2}$ and $\frac{1}{3}$

(c) Simplify : $(2a-3)(2a+3)+7$, then find the numerical value of the result when $a = -1$

5 (a) What is the increase of : $x^2 - 5x - 1$ than $3x^2 - 2x - 3$

(b) Divide: $x^2 - 8x + 12$ by $(x - 6)$

(c) The following table shows the marks of Ali in 5 months:

The month.	Sep.	Oct.	Nov.	Dec.	Jan.
The mark.	30	40	35	45	50

Represent these data by broken line.

1 Choose the correct answer:

1) The rational number which lies between $\frac{1}{3}$ and $\frac{2}{5}$ is = ...

a) $\frac{5}{15}$ b) $\frac{7}{15}$ c) $\frac{11}{30}$ d) $\frac{13}{30}$

2) $\frac{9}{x - 2} \in Q$ if x $\neq$ ....

a) 9 b) 2 c) 0 d) -2

3) The median of the values: 3, 7, 2, 9, 5 and 11 is ....

a) 5 b) 6 c) 7 d) 12

4) If $x + \frac{3}{x} = 7 + \frac{3}{7}$ then x = ...

a) $\frac{1}{7}$ b) $\frac{4}{7}$ c) 1 d) 7

5) $\left|-\frac{3}{2}\right|$ .... zero.

a) > b) < c) = d) ≤

2 Complete each of the following:

1) The coefficient of $5x^3y$ is ....
2) The mode of the numbers 5, 8, 9, 11, 5 is ....
3) The multiplicative inverse of the rational number $2\frac{1}{5}$ is ....
4) The Arithmetic mean of the values 14, 18, 17 and 15 is ....
5) $|-6| - |3|$ = ...

3 a) Use the distributive property to calculate:

$$\frac{7}{12} \times \frac{23}{45} + \frac{17}{12} \times \frac{23}{45} - 2 \times \frac{23}{45}$$

(b) **Divide:** $(60x^6 - 48x^{10} - 12x^3)$ by $(-12x^3)$

4 a) Factorize by taking the H.C.F. $12x^2y - 6xy^2$

(b) **Reduce to the simplest form:** $(3x - 2)^2 - (x + 2)(x - 2)$

(c) **Divide: 3** $x^2 - x - 2$ by $(x - 1)$

5 a) Add: $3a - 2b + C$ and $2a + 3b - 5C$

(b) **from the following table:**

Mark.	5	6	7	8	9	10
No. of pupils freq.	3	5	7	9	4	2

1- Represent the data by bar charts.
2- Find the mode mark.

1 Choose the correct answer:

1) $\frac{5}{x+1}$ is The rational number if $x \neq$ .... {O , 5 , 1 ,- 1}

2) $(3x+2)(x+7) = 3x^2 +$ .... $+ 14$ { 23 x ,19 x , 21 x, 2x}

3) The mode of the values: 4, 3, 8, 1, 8 , 3 and 3 is .... { 1 , 8 , 3 , 4}

4) $(4a^2 + 2a) \div 2a$ = ………… { 2a +1, 2a, 2a - 1, 1 }

5) the number $0.\dot{5}\dot{7}$ as a rational number in the simplest form is ....

{ $\frac{5}{9}$, $\frac{19}{33}$, $\frac{3}{7}$, $\frac{2}{3}$ }

2 Complete:

1) The degree of the term $5x^2y$ is .... and its coefficient is ....
2) The arithm. mean of the these numbers 2, 5, 8, 9, 14, 28 is ....
3) $x(a+1) - y(a+1) = (a+1)($ .... - ....) .
4) The median of these numbers 12, 13, 8, 2, 10 is ....
5) The multiplicative inverse of the rational number $1\frac{2}{3}$ is ....

3 a) Add: $5x^2 + y^2 - 3xy$ and $x^2 - 2xy + 3y^2$

(b) **Subtract:** $5a - 3b + 6c$ from $2b + a - 5c$

(c) **Factorize by identifying the H.C.F:** $15a^3b^2 + 6a^2b - 3ab$

4 a) If $x = \frac{1}{2}$, $y = -3$ and $z = \frac{-3}{4}$

Find in the simplest form the numerical value of: $(x \div z) \times y$

(b) Using the property of distribution to get the result of

$\frac{2}{3} \times \frac{4}{7} + \frac{2}{3} \times \frac{5}{7} - \frac{2}{3}$

(c) **Divide:** $x^2 - 5x + 6$ by $(3 - x)$

5 a) Simplify: $(2x+1)^2 + (1-2x)(1+2x)$

(b) **This frequency table shows the weight of 30 primary school pupils:**

KG.	25	26	27	28	29	30	31	32
Number of pupils	5	8	5	3	5	6	4	4

a) Draw a bar chart for the frequency table data.
b) Identify and write the mode weight of the primary school pupils.

❶ Question one : Choose the correct answer:

1) If $\frac{x}{y} = 1$ then $2x - 2y =$ .... {4 , 2 , 1 , 0}

2) The degree of $- 5 x^2y^3z$ is .... { 2 , 3 , 5 , 6}

3) The order of median of 7 values is .... { 3 , 4 , 5 , 6}

4) $|-5| - |4| =$ .... { -1, 1, -9, 9 }

5) The number between $\frac{2}{3}$, $\frac{3}{5}$ is .... $\{\frac{30}{45}, \frac{29}{45}, \frac{18}{30}, \frac{20}{30}\}$

❷ Question two : Complete:

1) The most repeated value is ....

2) The number 1.25 in the form of $\frac{a}{b}$ is ....

3) Subtracting $-5 xy$ from $- 3xy =$ ....

4) $(x + 3)^2 = x^2 +$ .... $+ 9$.

5) The sum of 5 values if there mean is 5 is ....

❸ Question three:

(a) Find the value of $(2x - 3)(2x + 3) + 9$

(b) Use an arrow to represent the number $\frac{7}{9}$ on the number line.

(c) Find the value of k that makes the expression:
$x^3 + x^2 + 2x + k$ is devisable by $(x - 3)$

❹ Question four:

a) **Divide:** $9x^2y + 12xy^2 - 15x^2y^2$ by $-3xy$ where $x, y \neq 0$

(b) Find the value of $(-\frac{3}{7}) \times \frac{5}{6} - \frac{5}{6} \times (-\frac{3}{7})$

❺ Question five :

(a) **Factorize the following by taking H. C. F.:** $15x^3y^3 - 20x^2y^3 - 25x^3y^2$

(b) Ashraf recorded the length of his bus journeys to school for 3 weeks. He wrote time to the nearest minute.

15	17	16	17	15	13	22	16	14	25	17	16	18	16	18

a) Identify the median time.

b) Identify the mode time.

(c) Calculate the mean time.

Answer the following questions:

1 Choose the correct answer from the given ones:

1) The additive inverse of the number $(-2)^3$ = ...

(a) 8 b) -8 c) 4 d) 6

2) $(x^{-2})^3$ = ... $x \neq 0$

(a) x^{-5} b) x c) x^{-6} d) x^6

3) The probability of the impossible event = ...

(a) 1 b) ϕ c) -1 d) zero

4) Half the number 2^{10} is ……......…

(a) 2^9 b) 2^5 c) 2^{11} d) 2^{20}

5) 0.0000073 = ...

(a) 7.3×10^6 b) 7.3×10^{-6} c) 7.3×10^5 d) 7.3×10^{-5}

2 Complete the following:

1) $\sqrt{16+9}$ = ...

2) 2, 7, 12 , 17 , ... (in the same pattern)

3) $(\frac{-2}{3})^6 \div (\frac{2}{3})^4$ = ...

4) If 3 x = 12 then 2 x = ...

5) A fair die is rolled once, then the probability of getting an odd number equals .....

3 Find each of the following:

(a) $(\frac{2}{5})^2 \times \sqrt{\frac{25}{4}} \times (1\frac{3}{4})^0$

(b) Determine 3 ordered pairs satisfying the relation y = 2x + 1, then graph them.

(c) **Divide:** $6x^2 - 13x + 6$ by (3x -2).

4 (a) **Find the solution set of each of the following in Q:**

1) 2 x - 1 = 7 2) 3 x + 4 ≥ 10

(b) Simplify: $\frac{(7)^3 \text{ x } (-7)^4}{(7)^5}$

5 (a) If $x = \frac{2}{3}$, $y = \frac{-3}{4}$, z = 2

Find the numerical value of $x^2 y^2 + 2z$

b) A box contains 3 red balls, 5 yellow balls and 2 black balls. A ball is drawn randomly, find the probability that the drawn ball is.

(a) yellow ball. b) not black ball. c) red ball

1 Choose the correct answer:

1) $0.\dot{7}$ = ...

a) $\frac{7}{10}$ b) $\frac{7}{9}$ c) $\frac{7}{100}$ d) $\frac{7}{99}$

2) The multiplicative inverse of the number $\frac{1}{2}$ is ....

a) 1 b) -2 c) 2 d) 5

3) If $(x - 3)(x + 3) = x^2 - k$ then k = ...

a) 9 b) 6 c) -9 d) -6

4) The median of values 9 , 7 , 10 is ....

a) 7 b) 10 c) 9 d) 3

5) $|-3| + 3$ = ...

a) zero b) 6 c) -6 d) 33

2 Complete each of following:

1) $x^4 \times x^2$ = ...
2) The degree of the algebraic expression $5x^2 + 4$ = ...
3) $(2x + 5)^2 = 4x^2 + ... + 25$
4) The rational number which is between $\frac{4}{11}, \frac{6}{11}$ is ....
5) If a + b = 5 then 3a + 3b = ...

3

a) Add: $2x - 5y + 6z$ to $3x + 5y - 2z$

(b) **Divide:** $8b^3 + 12b^2 - 4b$ by $4b$

4

a) Using distributive property, find the value of $\frac{5}{13} \times 8 + \frac{5}{13} \times 5$

(b) Factorize by taking the H. C. F : $9x^2 - 27x$

(c) **Divide:** $x^3 + x^2 + 2x - 16$ by $(x - 2)$

5

a) Find three rational numbers lying between: $\frac{1}{3}, \frac{1}{2}$

(b) **The following table shows the frequency of marks of 33 students:**

Marks	5	6	7	8	9	10
Frequency	4	10	8	6	3	2

1) Represent it with column.
2) Find the mode.

1 Complete:

1) The degree of $7x^3y$ is = ...
2) The multiplicative inverse of the rational number $3\frac{1}{2}$ is ....
3) The mode of the values (17 , 10 , 12 , 17, 10 and x) is 10, then x = ...
4) $(2x + 3)(\ldots\ldots + 4) = 6x^2 + \ldots\ldots + 12$
5) $\frac{-7}{x-3} \in Q$, then $x \neq$ ....

2 Choose the correct answer:

1) The Arithm. mean of the values 11, 20, 22, 15, 22 is ....
(a) 18 b) 15 c) 22 d) 90
2) $|5 - 7| + 2 =$ ....
(a) -2 b) 4 c) 0 d) 2
3) The number which lies at half way between $\frac{1}{2}$ and $\frac{7}{8}$ is ....
(a) $\frac{11}{16}$ b) $\frac{11}{8}$ c) $\frac{11}{4}$ d) $\frac{11}{32}$
4) The median of the numbers 6, 2, 8, 0, 3 and 5 is ....
(a) 3 b) 4 c) 6 d) 5
5) The increase of (2x -5) than (x - 2) = ...
(a) 3x - 7 b) x - 3 c) 3 - x d) $2x^2 + 10$

3 Use the distributive property to find:

(a) $\frac{7}{13} \times 11 + \frac{7}{13} \times 9 - \frac{7}{13} \times 7$
(b) Add $x^2 + 5xy - 5$ and $-4x^2 + 5xy + 2$
and find the value of the result when x = 2 and y = 1
(c) **Divide:** $x^3 + 2x^2 - 1$ by $(x + 1)$

4 Divide:

(a) $\frac{16x^3y - 12x^4 + 4x}{4x}$ where $x \neq 0$
(b) Find three rational numbers lying between: $\frac{1}{3}$, $\frac{1}{2}$

5 Factorize by taking H.C.F :

(a) $4x^2 + 2x + 16x^4$
(b) Simplify (x - 5) (x + 5).
(c) The following table shows the marks of Heba in 5 months.

The month.	Sep.	Oct.	Nov.	Dec.	Jan.
The mark.	30	40	35	45	50

Represent these data by broken line.

1 Complete the following:

(a) The mode of the values 23, 33, 23, 33, 23, 21 is ....

(b) $(x - 2y)^2$ = ...

(c) The multiplicative inverse of $(\frac{1}{3} - \frac{1}{2})$ is ....

(d) The degree of the expression $(2xy^2 - 5xy^3 + 4xy)$ is ....

(e) If the Arithm. mean of 10 values is 54.5, then the sum of these values = ...

2 Choose the correct answer:

(a) $|3 - 8| + 3$ = …......… . {-2 , 8 , -8 , 2}

(b) The number which lies at half the way between $\frac{1}{2}$ and $\frac{7}{8}$ is .. $\{\frac{11}{16}, \frac{11}{8}, \frac{11}{4}, \frac{11}{32}\}$

(c) $0.\dot{5}\dot{7}$ = ... $\{\frac{57}{100}, \frac{75}{99}, \frac{575}{1000}, \frac{19}{33}\}$

(d) The median of the numbers 23 , 33 , 13 , 32 , 22 , 31 is ...... {22 , 23 , 27 , 32}

(e) If $(x - 7)(x + 7) = x^2 + a$, then a = ... {14 , -14 , 49 , -49}

3 (a) Use the properties of multiplication and addition to find the value of:

$\frac{8}{13} \times 11 + \frac{8}{13} \times 9 - \frac{8}{13} \times 7$

(b) Find three rational number lies between $\frac{3}{4}$ and $\frac{2}{3}$

4

(a) Subtract $5x^2 + y^2 - 3xy$ from $x^2 - 2xy + 3y^2$

(b) Factorize by taking out the H.C.F $12x^5y^2 - 15x^3y^2 + 3yx^2$

(c) **Divide:** $x^2 + 10x + 24$ by $(x + 4)$

5

(a) **Divide:** $(18x^3y - 12xy^2 + 6xy)$ by 6xy?

(b) The table shows scores for a class on a 10 points math test.

Scores	5	6	7	8	9	10
Frequency	4	10	8	6	3	2

Find

i) The number of students whose score less than 8 ?

ii) the median of the score ?

iii) the mode of the score?

Answer the following questions:

1 Choose the correct answer:

(a) If $\frac{7}{a-4}$ rational number then a ≠ .... {7 or 4 or - 4 or zero}

(b) $|-5| + 5 =$ .... {zero or 10 or 55 or 25}

(c) The mode of the numbers 6, 8, 8, 5, 6, 8 and 7 is .... {5 or 6 or 7 or 8}

(d) If $\frac{x}{y} = 1$, then $2x - 2y =$ .... {zero or 1 or 2 or -4}

(e) Write the number 0.18 in the form of $\frac{a}{b} =$ ....

{$\frac{18}{10}$ or $\frac{2}{11}$ or $\frac{18}{100}$ or $\frac{99}{18}$ }

2 Complete:

(a) $(\frac{-2}{3})^0 + 4 =$ ....

(b) The additive inverse of the number $(\frac{-3}{5})$ is ....

(c) The median of the values 7 , 4 , 5, 2 and 9 is ....

(d) The degree of the algebraic term - 7 is ....

(e) If $\frac{2}{3}x = 1$ then x = ...

3 (a) Factorize by identifying the H.C.F $15a^3b^4 + 6a^5b^2 - 3a^2b^2$

(b) Find the rational number in half-way between the numbers $\frac{1}{3}$ and $\frac{4}{5}$.

(c) **Divide:** $(64x^3 - 32x^2 + 8x)$ by $8x$

4 (a) Add: $-7a - 5b + 9c$ and $2c - 4a + 3b$

(b) Find the total area of the cube its volume 27 cm^3.

(c) if $A = \frac{3}{4}$ and $B = \frac{-5}{2}$ Then find the value of $\frac{A - B}{A + B}$

5 (a) Find the mean of the values 2 , 5, 8 , 9, 14 and 28

(b) **Divide:** $x^4 - 16$ by $(x^2 + 4)$

(c) The table shows scores for a classroom a 10 point math test.

Scores	4	5	7	8	9	10
Frequency	6	5	13	7	4	2

1) Represent these data by broken line graph.

2) what is the mode of the score.

❶ Choose the correct answer:

1) The value of $|-7| + |-1| =$ .... = (-8 , 6 , 8 , -6)

2) $(35x^5 + 7x^2) \div 7x^2 =$ .... ($5x^3 + x$, $5x^3 + 1$, $5x^7 + 1$, $5x^3$)

3) The algebraic, term $2ab^2$ is of .... degree (1st , 2nd , 3rd , 4th)

4) The median of the numbers: 2, 8, 5, 7, 6 is .... (5 , 7 , 8 , 6)

5) The mean of the number: 2, 7, 6, 9, 16, 20 is .... (6 , 10 , 9 , 11)

❷ Complete:

1- $(x + 3)(x - 3) = x^2 -$.........

2- The multiplicative inverse of the number $\frac{-2}{3}$ is ....

3- $3a^2 \times -2a^3 =$ ....

4- The mode of the values 4, 8, 6, 4, 4, 8 is ....

5- The rational number in half way between $\frac{3}{5}$, $\frac{4}{5}$ is ....

❸ (a) **Subtract:** $5x^2 + y^2 - 3xy$ from $x^2 - 2xy + 3y^2$

(b) **Divide:** $14x^3 - 21x^2 + 7x$ by $7x$ where $x \neq 0$

(c) **Add:** $2x - 7y + z$ and $5z + 6y - 2x$

❹ (a) Use the destructive property to find:

$\frac{8}{13} \times 11 + \frac{8}{13} \times 9 - \frac{8}{13} \times 7$

(b) Simplify $(x + 3)(x + 5)$

(c) if $a + b = 3$ then $5a + 5b =$ ....

❺ (a) **Find:** $\frac{3}{5} \div \frac{9}{15}$

(b) **Divide:** $x^2 - x - 72$ by $(x - 9)$

(c) Represent these data by using broken line:

The month	Sep	Oct	Nov	Dec	Jan
The mark	30	40	35	45	50

Answer the following questions:

1 Choose the correct answer in brackets:

1) If $|x| = 9$, then x = ...

(a) -9 b) ±9 c) 3 d) 9

2) $(5)^{-1}$ = ...

(a) -5 b) $-\frac{1}{5}$ c) $\frac{1}{5}$ d) 5

3) The mean of the values 2, 5, 8, and 9 is ....

(a) 6 b) 18 c) 9 d) 11

4) The ordered pair .... satisfies the relation: $y = x + 2$

(a) (1 , 3) b) (3, 2) c) (1, 2) d) (-2, 4)

5) The multiplicative inverse of the number .... is itself

(a) -1 b) 0 c) 2 d) 3

2 Complete each of the following:

(a) $(x + 5)(x + ...) = x^2 + ... + 15$

(b) The standard form of the number 290000 is ....

(c) (20 - 1) (20 + 1) = 400 - ....

(d) If x < y, z < zero , then xz ....yz

(e) If the age of Ahmed now is x years, then his age after four years = ... years

3 Find the solution set of each of the following:

(a) $x + 13 = 14$, $x \in Q$

(b) $1 \leq x - 5$, $x \in Q$

4

(a) Simplify and find the value of: $\times \sqrt{\frac{81}{16}} \times (\frac{2}{3})^3 \times (\frac{5}{7})^0$

(b) Use the distribution property to find the value of: $\frac{7}{15} \times 4 + \frac{7}{15} \times 11$

(c) Find the value of k that makes the expression:

$6x^3 - 13x^2 - 13x + k$ is divisible by $(3x - 5)$

5

(a) The following table shows the distribution of marks for 30 students in an Exam.

Marks	4	5	7	8	9	10	Sum
Frequency	6	7	3	7	4	3	30

Represent the data by a broken line.

(b) 6 cards numberd from 1 to 6. One card is selected randomly.

Write the sample space, then find the probability of each of the following events:

1) A = getting a prime number.

2) B = getting a number smaller than 3.

Dakahlia 13 — M . L S

1 **Complete:**

(a) The multiplicative identity element in Q is = ...

(b) $\left|-2\frac{1}{2}\right| - \left|2\frac{1}{2}\right| =$ ....

(c) The degree of the algebraic term $5\,x\,y^2$ is ....

(d) If a + 2b = 5, c = 2 then the value of a + 2(b+c) = ...

(e) The mode for the numbers 6, 2, 5, 4, 6, 3 is = ...

2 **Choose the correct answer:**

(a) $3x^2 \times 4x^2$ = ... ($7x$, $7x^2$, $12x^4$, $12x^2$)

(b) 0.57 = ... ($\frac{57}{100}$, $\frac{75}{1000}$, $\frac{57}{999}$, $\frac{19}{33}$)

(c) If (x - 6) (x + 6) = x^2 + k. Then k = ... (36, -36, 12, -12)

(d) $\frac{5}{x-2} \in$ Q If x ≠ .... (7, 2, 0, -2)

(e) The area of rectangle of length 3 xy and width 2 y is ....

(5 xy , 6 x^2y, $6xy^2$, 10 xy)

3 **(a)Add:** (5x + 2y - 1) and (2x - 5y - 3)

(b) Use the distribution property to find: $6 \times \frac{5}{17} + 10 \times \frac{5}{17} + \frac{5}{17}$

(c) Find the value of k that makes the expression:

$x^3 - 3x^2 - 25x + k$ is devisable by $(x^2 + 4x + 3)$

4 (a) Find the quotient of: $\frac{24a^3 + 9a^2 - 3a}{3a}$, (a ≠ 0)

(b) Find two rational numbers between $\frac{1}{3}$ and $\frac{3}{4}$

5 (a) If $x = \frac{2}{3}$, $y = \frac{-3}{4}$, z = 2 find the numerical value of: xy ÷ z

(b) The following table shows the marks of Ahmed in mathematics in 5 months:

Month.	Sep.	Oct.	Nov.	Dec.	Jan.
Marks.	30	40	35	45	50

Calculate Ahmed's mean marks in 5 months.

1 Complete:

(a) The degree of algebraic term ($5x^2y$) is ....

(b) $\frac{2}{8} + \frac{-5}{8} =$ ....

(c) The mean of 2, 5, 8, 9, is ....

(d) $(x - 5)(x + 5) =$ ....

(e) If $|y| = 10$, then y = ... or ....

2 Choose the correct answer:

(a) The median of the numbers 8, 17 , 4 , 6 and 10 is .... (11, 10, 6, 8)

(b) $-15\ ab^4 \div 5\ ab^3$ = ... Where $ab \neq 0$ (3b, -3b, -3ab, 3ab)

(c) The mode of the numbers 2, 5, 7, 6, 4 and 6 is .... (5, 6, 7, 2)

(d) 0.5 in the form $\frac{a}{b}$ is = ... $(\frac{4}{9}, \frac{5}{9}, \frac{7}{9}, \frac{8}{9})$

(e) The number that has no multiplicative inverse is .... (1, -1, 0, 2)

3 (a) using distributive property to find the value of:

$\frac{-3}{7} \times 8 + 5 \times \frac{-3}{7} + \frac{-3}{7}$

(b) Add: $3y^2 + 2xy - 5$ to $- 2x^2 - 3xy + 3$

(c) **Divide:** $3x^2 - 4y - 20$ by $(y + 2)$

4 (a) If $a = \frac{3}{4}$, $b = \frac{-5}{2}$ Find in the simplest form the numerical value of: $\frac{a - b}{a + b}$

(b) Factorize by identifying the H.C.F: $12\ a^2\ b + 18\ a^3\ b^2$

5 (a) Simplify : $(x - z)^2 - 4$

(b) The following table shows the marks of Ali in 5 months:

The month.	Sep.	Oct.	Nov.	Dec.	Jan.
The marks.	30	40	35	45	50

Represent these data by broken line.

1 Choose the correct answer:

1) $x^3 \times x^2 =$ ....

a) x^6 b) x c) x^3 d) x^5

2) If $\frac{x}{y} = \frac{2}{3}$ then $\frac{3x}{2y} =$ ....

a) $\frac{1}{3}$ b) $\frac{2}{3}$ c) 1 d) $\frac{3}{2}$

3) Express $\frac{5}{11}$ as a decimal

a) 0.45 b) 0.454 c) 0.45 d) 0.045

4) The Algebraic term $2x^3$ has .... factors

a) 2 b) 3 c) 4 d) 5

5) The mean of these numbers 7, 4, 9, 2, 8 is ....

a) 5 b) 4 c) 8 d) 6

2 Complete:

(a) The mode of these numbers 4, 5, 3, 4, 6, 5, 4 is ....

(b) $18a^2 \div 3a =$ ....

(c) $\frac{3}{5} \times \frac{2}{7} =$ ....

(d) The median of these numbers 28, 31, 34, 36, 41 is ....

(e) $\frac{3}{7} \times$ .... $= 1$

3 (a) Simplify: $(4x + 1)(2x + 3)$

(b) Factorize by identifying the H.C.F $4m^2(2x + y) - 3m(2x + y) - 7(2x + y)$

4 (a) Identify and write five rational numbers between $\frac{3}{5}$, $\frac{4}{5}$

(b) Find the sum of $(3x - 2y + 5)$ and $(x + 2y - 2)$

(c) **Divide:** $5x - x^2 + 6$ by $(x - 6)$

5 (a) If water flows through a pipe at the rate of $2\frac{1}{2}$ litres per minute, how many minutes will it take to fill three 20- litre containers?

(b) The frequency table shows the weights of 40 pupils.

Weights (kg)	30	35	40	45
Number of pupils	8	9	13	10

Draw a bar chart for the frequency table data.

Answer the following questions:

1 Choose the correct answer:

1) If : $(x + 5)(x - 5) = x^2 + k$, then k = ……….

a) 5　　b) -5　　c) 10　　d) -25

2) The mode of 4 , 5 , 10 , 4 and 7 is ....

a) 5　　b) 10　　c) 4　　d) 7

3) If: $\frac{x}{y} = \frac{2}{3}$, then $\frac{3x}{2y} =$ ....

a) $\frac{1}{3}$　　b) $\frac{2}{3}$　　c) $\frac{3}{2}$　　d) 1

4) The rational number that lies at half way between: $\frac{1}{3}$ and $\frac{5}{6}$ is ....

a) $\frac{2}{3}$　　b) $\frac{7}{12}$　　c) $\frac{1}{2}$　　d) $\frac{2}{7}$

5) $(4x - 3)(x - 4) =$ ....

a) $4x^2 - 19x-12$　　b) $4x^2 - 7$　　c) $4x^2- 12$　　d) $4x^2 - 19x + 12$

2 Complete each of the following:

1) The number which it's additive inverse is itself is ....

2) If: $\frac{3}{5} \times x = 1$, then x = ...

3) The degree of $4\,x^3y^4$ is ....

4) The additive inverse of $\frac{1}{|-5|}$ is ....

5) If the mean of : x - 3, x, x + 3 is 6, then the value of x is ....

3

(a) Simplify: $(2a -3b)^2 - 3(2a - b)(2a + b)$, then find the numerical value of the result if a = -1 and b = -2

(b) Use the distributive property to find the value of: $\frac{3}{13} \times 4 - \frac{3}{13} \times 3 - \frac{3}{13}$

(c) **Divide:** $8x^2 -7x - 18$ by $(x - 2)$

4

(a) Factorize : $12x^3 - 6x^2 + 3x$

(b) Multiply : $(2x + 5) \times (2x - 5)$

(c) **Divide:** $27x^2y^4 - 15x^3y^3 + 9x^2y^2$ by $3x^2y^2$ where $xy \neq 0$

5

(a) If : $a = \frac{-1}{3}$, $b = \frac{3}{2}$, c = 2 find: a + b - c.

(b) The table shows the scores of one class in math quiz of maximum 10 scores:

Marks	5	6	7	8	9	10
Frequency	2	7	6	4	4	3

Represent the data using bar line graph.

Fayoum 17 Fayoum East Directorate - Islamic Language School- Nafessa El-Hussary

Answer the following questions:

1 Choose the correct answer:

1) $\frac{3}{4}$ = ... %

a) 25 b) 50 c) 75 d) 100

2) $(-8y^5) \times (-7y^4)$ = ...

a) -15 y b) $56y^9$ c) $-56y^9$ d) 56y

3) The median of the numbers 3, 8, 6, 6, 10, 2 is ....

a) 6 b) 7 c) 8 d) 10

4) If: $\frac{5}{x-3} \in Q$ then $x \neq$ ....

a) 5 b) 7 c) 2 d) 3

5) $(x^2 + x) \div x$ = ... where $x \neq 0$

a) 0 b) x c) 2x +1 d) x +1

2 Complete the following:

a) The additive inverse of zero is ....

2) the mode of the values 3, 6, 19, 10, 13, 6, 19, 21, 6 is ....

3) $(x + 2)(x + 3) = x^2 +$ .... + 6

4) $|-5| - |-2|$ = ...

5) The mean of 2, 5, 8, 9 is ....

3 **(a)** Find three rational numbers lying between $\frac{1}{3}$ and $\frac{3}{2}$**:**

(b) **Subtract:** 3x - 5y + 2z from y - 4z + 3x

(c) **Divide:** Find the value of k that makes the expression:

$x^3 + x^2 + 2x + k$ is divisible by (x - 1)

4 **(a) factorize by taking out H.C.F:** $10 \times y^2 - 5x^2y$

(b) Use the distributive property to find: $\frac{8}{13} \times 11 + \frac{8}{13} \times 9 - \frac{8}{13} \times 7$

5 (a) find the quotient of dividing: $6x^3 - 12x^2 + 24x$ by 6 x where $x \neq 0$.

(b) The following table shows the marks of Mohammed in math in 5 months:

Month.	Sep.	Oct.	Nov.	Dec.	Jan.
Marks.	45	35	45	40	50

Represent the previous data by broken line graph.

Beni Suef 18

Nasser Directorate - Nasser Exp - Language School

Answer the following questions:

1 Complete each of the following:

1) $\frac{3}{7} \times$ .... $= 1$

2) $(x + 5)(x +$ ....$) = x^2 +$ .... $+ 15$

3) The mean of these numbers 2, 5, 8 and 9 is ....

4) $\frac{2}{5} <$ .... $< \frac{3}{5}$

5) The algebraic expression $4x^3 - xy + 5$ is of the .... degree.

2 Choose the correct answer:

a) By using calculator $0.\dot{5}8\dot{1} = \frac{.....}{.....}$ $\left(\frac{32}{55}, \frac{581}{1000}, \frac{581}{100}, 5\frac{81}{100}\right)$

b) The algebraic term $2x^3$ has ...... factors. (2, 3, 4, 5)

c) The mode of the numbers 3, 6, 10, 13, 19, 21, 19 is .... (21, 19, 13, 10)

d) If $x = \frac{4}{3}$ then $(x-2)(x+2)$ equal .... $\left(\frac{4}{9}, \frac{12}{9}, \frac{10}{9}, \frac{-20}{9}\right)$

e) The cube of the sum of A and B is .... $(A^3 + B^3, (A + B)^3, A^3 B^3, 3A + 3B)$

3 (a) Without using calculator find the value of:

$\frac{4}{9} \times 11 + \frac{4}{9} \times 16$

(b) What is the increase of $x^2 - 5x - 1$ than $3x^2 + 2x - 3$

4 (a) Find the rational number in half way between $\frac{3}{8}$ and $\frac{4}{9}$

(b) Simplify: $2x(x + 5) + x(6-x)$ then calculate the numerical value when $x = 2$)

(c) **Divide:** $4x^2 - 10x + 12$ by $(2x - 4)$

5 (a) Find the quotient of: $\frac{60x^6 - 48x^{10} - 12x^3}{12x^3}$

(b) Scores in a frequency distribution are arranged in order.

score	5	6	7	8	9	10	11	12
frequency	2	7	6	4	4	3	2	1

1- Find the median of the scores.

2- Find the mode of the scores.

1 Choose the correct answer:

1) $(x^2 + x) \div x = ...$ $(0, x, 2x + 1, x + 1)$

2) The mean of these numbers 2, 5, 8, 9 is .... (6, 8, 9, 11)

3) $3a^4 b \times 5a^2 b^2 \times {}^2a^3 =$ .... $(60a^{11} b^3 , 30a^2 b^2 , 30a^9 b^3)$

4) The rational number 0.57 in simplest form is ....

$(\frac{57}{100}, \frac{75}{99}, \frac{575}{1000}, \frac{19}{33})$

5) If $a \times \frac{b}{2} = \frac{a}{2}$, then b = ... $(\frac{a}{2}, 0, a, 1)$

2 Complete:

1) $(x + 5)(x + ...) = x^2 + ... + 15$

2) $0 \div (-14) =$ ....

3) If $|x| = 7$ x = ... or ....

4) The mode of these numbers 3, 6, 10, 19, 19, 21 is ....

5) The multiplicative inverse of $\frac{2}{3}$ is ....

3

(a) **Write the product:** $(x + 4)(3x + 2)$

(b) If $x = \frac{3}{2}$, $y = \frac{1}{4}$, $z = -2$ then find the numerical value of $x - y \div z$

(c) **Divide:** $10x^2 - 70x + 120$ by $(5x - 15)$

4

(a) **Find the quotient:** $\frac{16a^3 b^2 - 24a^2 b^2}{4a^2}$

(b) Simplify: $3x - 5y - x + 2y$.

5

(a) **Find the sum:** $(3x - 2y + 5)$ and $(x + 2y - 2)$

(b) **Subtract:** $2x + 6y - 7$ from $3x - 5y + 2$

Answer the following questions:

1 Choose the correct answer:

1) The mode of 4, 5, 10, 4 and 7 is ....

a) 5 b) 10 c) 4 d) 7

2) The degree of the Algebraic term 2 × y is .... degree

a) first b) second c) third d) fourth

3) The value of $|-7| + |1| =$ ....

a) -8 b) 8 c) 6 d) -6

4) If x = 2 then 3 x = ...

a) 6 b) 4 c) 5 d) 9

5) If $|k| = 7$, then k ....

a) 7 b) ± 7 c) -7 d) otherwise

2 Complete each of the following:

a) The multiplicative inverse of $\frac{1}{3}$ is ....

2) The mean of the values 3, 4, 5 and 6 is ....

3) $(2 \times - 3)(3 \times + 5) = 6 x^2 +$ .... -15

4) The coefficient of $- 3 \times y^{2}$ is ....

5) $\frac{1}{x - 3} \in Q$, then x ≠

3 (a) **Divide:** $(64 \times^{5} - 48 \times^3 + 8 \times^2)$ by $8 \times^2$ where × ≠ 0

(b) use the distributive $\frac{8}{13} \times 11 + \frac{8}{13} \times 9 - \frac{8}{13} \times 7$

(c) **Divide:** $x^3 - 25x$ by $(x + 5)$

4 **(a)** find three rational numbers between $\frac{3}{2}$ and $\frac{1}{3}$

(b) Subtract: $x + x^2 - 5$ from $2 x^{2} + x - 5$ then the value of result when x = s

5 (a) The following table shows the weights of 25 pupils of first prep

Weight in kg	32	33	34	35	36	37	38
No. of pupils	1	3	4	8	4	3	2

Represent this data using the bar line graph, then find the mode.

Alya yousry Hl. F

Alexandria governorate ____

East Educational Zone

Helalia Language School

Midyear Exam 2019-2020

Algebra middle (1)

Time Allowed (2 hours)

1-Complete the following

1) The number $\frac{4-x}{x-3}$ = 0 if x = ____

2) The additive inverse of the number $\left(-\frac{2}{7}\right)^{zero}$ is ____

3) If the mode of the values 12 , 7 , x+1 ,7 ,12 is 7, then x=____

4) The coefficient of the algebraic term $\frac{1}{2}x^3yz^2$ is ____

5) $(2x+3)^2$ = ____

2-Choose the correct answer from the given ones

1- $(a^2-a)\div a =$ ____ $(a \neq 0)$

a. a^2 b. a c. a^2+1 d. $a-1$

2- $(4x-3)(x-4) =$ ____

a. $x^2-19x-12$ b. $4x^2-7$

d. $4x^2-19x+12$ c. $4x^2-12$

3- Express $\frac{5}{11}$ as a decimal ____

a. 0.45 b. $0.\dot{4}5\dot{4}$ c. $0.\dot{4}\dot{5}$ d. $0.0\dot{4}\dot{5}$

4- The result of subtracting $2a^2$ from $-2a^2$ is ____

a. zero b. a^2 c. $4a^2$ d. $-4a^2$

5- The median of the values : 4 , 8 , 3 is ____

a. 3 b. 4 c. 5 d. 8

6- $\left|\frac{-5}{3}\right|$ ____ zero.

a. < b. > c. = d. ≤

3- a) **Using the distribution property, find the value of the following in the simplest form** $\frac{4}{5}\times 13-\frac{4}{5}\times 22+\frac{4}{5}\times 9$

b) **Subtract** $2a-3b-3$ from $5a-5b+1$

4- a) **Divide:** x^2+6x+5 by $x+5$ $(where\ x\neq -5)$

b) **Simplify:** $(3x+2y)(3x-2y)+4y^2$

c) **Find the mean and the median of the values:** 31 , 25 , 32 , 24 and 13

5-

a) **Write three rational numbers lying between:** $\frac{4}{5}$ *and* $\frac{2}{3}$

b) Factorize using H C F $18X^2y^3+6X^3Y^2-3X^2y^2$

c) $If\ a^2+b^2=34$, $and\ ab=15$, $then$ $find\ the\ value\ of\ (a-b)^2$

El-Gharbia Governorate.

East-Tanta Educational Directorate.

Al-Salam Language School.

Subject: Algebra & Statistics

Time : Two Hours

First Term Exam 2020

For First Preparatory grade

The Exam in Two Papers

1

Answer the Following questions :

(1) Choose the correct answer :

1) The degree of the algebraic term $3X^4 y$ is ....

(a) second (b) third (c) fourth (d) fifth

2) The mode of the values : 2 , 3 , 12 , 22 , 3 , 24 is ....

(a) 2 (b) 3 (c) 4 (d) 5

3) If $\frac{x}{y} = 1$, then $5x - 5y =$ ....

(a) 5 (b) 1 (c) zero (d) $4x$

4) The number $\frac{x-5}{x+7}$ is a rational number if $x \neq$ ....

(a) 5 (b) −5 (c) 7 (d) −7

5) The additive inverse of the number $(-\frac{1}{3})^0$ is ....

(a) 3 (b) −3 (c) −1 (d) $\frac{1}{3}$

6) The number which lies between $\frac{7}{11}$ and $\frac{7}{20}$ is ....

(a) $\frac{7}{10}$ (b) $\frac{-7}{11}$ (c) $\frac{7}{15}$ (d) $\frac{7}{22}$

(2) Complete the following :

1) If $\frac{x-9}{x-7} = 0$, Then X = ...

2) If $\frac{a}{b} = \frac{4}{7}$, Then $7a - 4b =$ ....

3) $0.74 - 4\,\% =$ ....

4) The rational number which hasn't a multiplicative inverse is ....

5) The median of the numbers : 4 , 7 , 2 , 9 , 5 , 16 is ....

(بقية الأسئلة في الورقة الثانية)

(3) a) Use the properties to find the result of :

$$\frac{8}{11} \times 5 + \frac{8}{11} \times 7 - \frac{8}{11}$$

b) Find the quotient of : $20a^3b^2 + 15a^2b^3 + 5ab$ by $5ab$
(where $ab \neq 0$)

(4) a) add : $2x - 7y + Z$, $5z - 2x + 8y$

b) Simplify the following expression to its simplest from :

$$(x-2)^2 - (x+3)(x-3) + 5(2x+1)$$

(5) a) Factorize by identifying the H.C.F :

$$12x^3y^4 + 8x^2y^4 - 20x^4y^4$$

b) Find the perimeter of ΔABC if the arithmetic mean of its side lengths equals 9 cm

Educational Directorate Shiben elkom Supervisor of:Math	1st term exam Algebra	1st prep. school Time : 2hours	2019-2020
For the questions (Choose) only the first answer will be taken into account.			

الجبر والاحصاء - الصف الأول الاعدادي - لغات

Question (1) Choose the correct answer:

a) The additive identity in the set of integer numbers is...

{zero ,1 ,-1 ,2}

b) If the mean of 4, 5, X is 6then X=...

{4 ,5 ,6 ,9}

C) The number: $\frac{zero}{-2}$ ....N

{$\notin$,$\in$, $\subset$, $\not\subset$}

d) The additive invers for the exceperation 2X-3Y is...

{-2x-3y , 2x+3y ,3y-2x ,-3y+2x}

e)the smallest prim number is {zero ,1 ,2 ,3}

f) If $\frac{X+4}{X-3}$ is rational number then X≠.............

{3 , -3 , 4 , -4}

Question (2) Complete each of the following:

a) The number that lies half the distances $\frac{1}{2}$,$\frac{3}{4}$ is...........

b) The order of the median for values: 4, 12, 9, 8, 2 is..................

C) If the number: y+5 haven't multiplicative invers then Y=.....

d)the reminder of subtraction 2X-1 from.........= 2X

f) If the mode for values 2, 4, k-3, is 4 then k=.....

question 3)

a) Factorize by H.C.F. $10X^3-5X^2$

b) Simplify $(a-4)^2+ 8(a-2)$

c) Add: $2X^2-5X+3$, $4X-X^2-2$

question 4)

a) Find three rational numbers between $\frac{3}{5}$, $\frac{1}{4}$

b) Use the distributive to find: $\frac{-5}{2} \times 4 \oplus \frac{-5}{2} \times 3 \oplus \frac{5}{2}$

c) if $X = \frac{3}{2}$, $Y = \frac{-5}{4}$ find in the simplest form the value of : $X^2 - 2XY$ (show steps)

==============

Question 5) a) divided: $(X^2 - 5X + 6)$ by $(X - 2)$; $x \neq 2$

c) Find the mean and the median of : 4 , 6 , 12 , 3 , 9 ,8 (show steps)

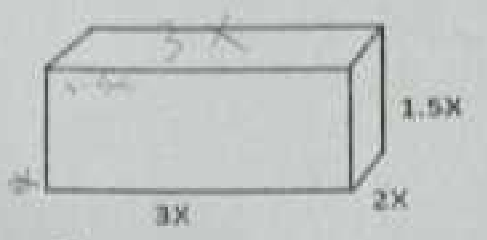
Finished , With our best wishes

Giza governorate
Haram Educational Zone
Technical office of supervision

Grade: Prep. One
Subject: Algebra
Time: 2 hours

Mid-Year Exam (2019 – 2020)

1) *Choose the correct answer:*

a) The volume of the cuboid  is ....

(1) 6.5X (2) $9X^3$ (3) $4.5X^3$

b) If $\frac{X-5}{X-7} = 0$, then X = ...

(1) 5.5 (2) 7.5 (3) 4.5

c) $(X^2 + X) \div X =$ ....

(1) 0 (2) 2X + 1 (3) X + 1

d) The median of the values 7, 4, 6, 5 is ....

(1) 6 (2) 7.5 (3) 4

e) If $\frac{X}{3} - 4 = 6$, then $\frac{X}{3} + \frac{2}{3} =$ ....

(1) $\frac{32}{3}$ (2) 10 (3) 1

f) The number $\frac{5}{3} >$ ....

(1) $\frac{10}{6}$ (2) $\frac{3}{5}$ (3) $\frac{10}{3}$

2) *Complete:*

a) If $\frac{a}{b} = \frac{1}{2}$, then $2\frac{a}{b} =$ ....

b) The algebraic term 3^2XY^3 whose degree is ....

c) If the mode of the values: 7, 5, X + 4, 7 is 7, then X = ...

d) The rational number which hasn't multiplicative inverse is ....

e) (50 + 1) (50 – 1) = 2500 – .... = ...

3) A) <u>Use the distribution property to find the value of:</u>

$$\frac{-3}{7} \times 8 + 5 \times \frac{-3}{7} + \left(\frac{-3}{7}\right)$$

B) <u>Write the product:</u>

$$(2X - 5Y)(2X + 5Y)$$

---

4) A) <u>Subtract:</u>

$-a^2 - 5ab + 4b^2$ from $3a^2 - 2ab - 2b^2$

B) If the arithmetic mean of the numbers 3, 5, X is 4

Find the value of X

---

5) A) <u>Factorize by identifying the H.C.F:</u>

$15a^3b^4 + 6a^5b^3 - 3a^2b^2$

B) If $X = \frac{-1}{3}$, $Y = \frac{3}{4}$, $Z = 3$

Find the numeral value of: $XY \div Z$

Cairo Governorate El Nozha Educational Zone	**First Term Exam** 2019/2020	Subject: Algebra and Statistics Form: 1st Prepare Time: 2 H

Question (1) *Choose the correct answer :*

(1) The algebraic term $8x^2y^2$ whose degree .... (2nd , 3rd , 4th , 5th)

(2) If the number $\frac{9}{x-6}$ is rational number then $x \neq \cdots$ (9 , -3 , 6 , 0)

(3) The median of the values: 7, 3, 5, 4, 9 is ...... (3 , 4 , 5 , 7)

(4) The number 2x is greater than -5x by .... (7 , 7x , -3x , -5x)

(5) If the mode of : 7 , 5 , X + 3 , 4 and 7 is 7 then X = ...(1 , 2 , 3 , 4)

(6) If $(x-2)(x+2) = x^2 + k$ then k = ... (8 , -8 , 4 , -4)

Question (2) *Complete the following :*

(1) $9y^3 - 3y^3 =$ ....

(2) If $x = \frac{5}{9}$, $y = \frac{3}{7}$ then $xy =$ ....

(3) The arithmetic mean of values 3 , 5 , 4 , 7 , 1 and 6 = ...

(4) $\frac{4}{5} = \cdots$ %

(5) $|-7| - |-9| =$ ....

Question (3)

[1] Use the distribution property to find the value of: $\frac{6}{8} + \frac{6}{8} \times 12 + \frac{6}{8} \times 3$

[2] Add: $2Y + 5X - 1$, $2X - 7 - 5Y$

Question (4)

[1] Divide: $30B^2 + 45B^3 + 5B$ by $5B$ where $B \neq 0$ then find the numerical value of the result when B= -1

[2] Find three rational numbers lying between: $\frac{1}{2}$ and $\frac{1}{3}$

Question (5)

[1] (a) Simplify to the simplest form: $(2X - 3)(2X + 3)$

(b) Factorize by taking the H.C.F : $5Y^3 + 15Y^2 - 10Y$

[2] The following table shows the distribution of marks in a test for 6 months :

The month	Oct	Nov	Dec	Jun	Feb	March
No, of students	7	8	10	9	5	3

Find the ~~mode~~ mean of these marks

Good Luck

Answer the following questions:

①-Choose the correct answer from those given :

1) $ab \times 2a^2b =$....... ($2a^3b^2$, $-2a^2b$, ab^4 , $-3ab$)
2) If the mode for the following set of values 7 , 5 , $y+3$, 5 and 7 is 7 , then $y =$ ......
(3 , 4 , 5 , 7)
3) The rational number that lies in half way between $\frac{1}{3}$ and $\frac{5}{9}$ is ....
($\frac{2}{3}$, $\frac{3}{4}$, $\frac{4}{9}$, $\frac{5}{27}$)
4) If the order of the median of a set of values is the fourth , then the number of these values equals .... (3 , 5 , 7 , 9)
5) If 2x = 10 , then $\frac{3}{5}x =$ .... (25 , 15 , 5 , 3)
6) The algebraic term $7\,xy$ is of .... Degree (first , second , third , fourth)

②-Complete each of the following :

1) $3xy + 6x =$ ....$(y + 2)$
2) $25\% - \left|\frac{-1}{5}\right| =$............
3) $\frac{-4}{11} \times$ .... = 1
4) If the sum of 5 numbers is 30 , then the arithmetic mean for these numbers = ...
5) The number $\frac{4}{x}$ is a rational number if $x \neq$ ....

③- A) Subtract $2x + 6y - 7$ from $2x - 5y + 2$

B) Divide : $14x^3 - 28x^2 + 7x$ by $7x$ where $x \neq$zero

④- A) Use the distribution property to find the value of : $\frac{2}{7} \times 9 + \frac{2}{7} \times 6 - \frac{2}{7}$

B) The length of a rectangle is ($2x + 5$) cm and its width is ($3x + 2$) cm

Calculate its area.

⑤- A) Find the median for the values 3 , 5 , 12 , 11 , 8 , 10

B) If $x = \frac{-1}{3}$, $y = \frac{3}{4}$, $z = -3$ Find in simplest form the numerical value of each of the following :

1) $yz + \frac{1}{4}$ 2) $xy + yz$

(انتهت الأسئلة)

Aswan Governorate
Aswan Educational Zone
School /

Subject : Maths (Algebra)
Time : Two hours

First term exam for 1st prep. 2019/2020

Answer the following questions :

Q1 : Choose the correct answer :–

1) $0.7 + 0.\dot{3} = \dots\dots$ (1 , 3.7 , 0.37 , $1\frac{1}{30}$)

2) If $\Delta + \square = 20$, $\Delta + \Delta + \square = 35$, then $\Delta = \dots\dots$ (15 , 20 , 5 , 10)

3) The mode for the values 1 , 3 , 7 , 3 , 6 , 7 and 3 is ……… (1 , 3 , 6 , 7)

4) The algebraic term $6x^3y^2$ is of ……… degree . (third , fourth , fifth , sixth)

5) If $\frac{2}{5}x = 10$, then $\frac{3}{5}x = \dots\dots$ (25 , 15 , 20 , 5)

6) The arithmetic mean of the set of values : 1 , 6 , 4 , 8 , 6 is … (25 , 5 , 6 , 8)

Q2 : Complete The following :–

1) $7x^3y^2 \times \dots\dots = 21x^3y^5$

2) The rational number half a way between $\frac{3}{5}$, $\frac{4}{5}$ is ………

3) If the order of the median of a set of values is the fourteenth , then the number of these values equals ………

4) 1 , 1 , 2 , 3 , 5 , 8 , …… (in the same pattern)

5) The multiplicative inverse of the rational number $-\frac{2}{3}$ is ………

Q3 : a) Use the distribution property to find the value of :

$$\frac{3}{7} \times 2 + \frac{3}{7} \times 6 - \frac{3}{7}$$

b) Divide : $14x^2y - 35xy^2 + 7xy$ by $7xy$ where $x \neq 0$ and $y \neq 0$

Q4 : a) Subtract : $5x^2 + y^2 - 3xy + 1$ from $6x^2 - 2xy + 3y^2$

b) Find three rational numbers that lie between $\frac{1}{2}$ and $\frac{1}{3}$

Q5 : a) Simplify to the simplest form : $(2x - 3)(2x + 3) + 7$, and calculate the numerical value of the result when $x = -1$

b) The following table shows the marks of Gehad in one Maths test in 6 months :

The Month	October	November	December	February	March	April
The Mark	41	35	47	37	44	48

Find : (a) The median for the previous marks .

(b) The mean for the previous marks .

Giza governorate (Omrania) Math. Inspection Subject : Algebra

Grade : Prep. 1 1[st] term exam. 2019-2020 Time : 2 hours

Answer the following questions

(1) **Choose the correct answer :**

(a) The mode of the values 6 , 8 , 6 , 1 , 1 , 9 , 8 , 2 , 8 is ....

(1 , 6 , 8 , 9)

(b) $x^3y \times xy^2 = ...$ (x^3y^2 , $3x^3y^4$, x^4y^3 , x^3y^3)

(c) the multiplicative invers of $\left|\frac{-7}{8}\right|$ is ....($\frac{-7}{8}$, $\frac{8}{7}$, $\frac{-7}{8}$, $\frac{-8}{7}$)

(d) The degree of the expression ($x^3 + 2xy + 3y^2x^2$) is the

.........degree (1[st] , 2[nd] , 3[rd] , 4[th])

(e) $(-5x) + (-3x) - x = ...$ (-9x , 9x , 8x , -8x)

(f) $(3a + 2b)^2 = 9a^2 + ...+ 4b^2$ (6ab , 12ab , 24ab , 36ab)

(2) **Complete the following :**

(a) The arithmetic mean of the values 22 , 18, 15 , 25 and 30 is ...22

(b) $-\frac{1}{4} + \frac{1}{4}......= 0$

(c) $(x + 4)(x - 4) = x^2$ ...-16

(d) The median of the values 23, 16, 12 , 28 , 21, 32, 9 is 21

(e) $7x(x + 5y) = 7x^2 + ...$ 35xy

9, 12, 16, 21, 23, 32, 28

(3) (a) By using the distribution property find :

$\frac{5}{9} \times \frac{2}{7} + \frac{5}{9} \times \frac{1}{7} + \frac{5}{9} \times \frac{4}{7}$ $\frac{5}{9}$

(b) Subtract $5x^2 + 2x - 1$ from $8x^2 - 3x + 7$

$3x^2 - 5x + 8$

(4) (a) If $a = \frac{1}{2}$, $b = -\frac{2}{3}$, $c = 3$, Find the value of

$c^2 - 6ab$ 11

(b) Simplify to the simplest form $(5x - 6)^2 + 60x - 36$

$25x^2$

(5) (a) Divide : $x^2 + 12x + 35$ by $x + 5$ (where $x \neq -5$)

$x + 7$

(b) The following table shows the marks of 50 students

9

Marks	4	6	9	12	15	18
Frequency	6	13	16	7	5	3

Find the mode of these marks

Dakahlia Governorate Maths supervision	First Term exam 2019 - 2020 Jan. 2020	Subject : Algebra Time: 2 Hours 1st Prep

[Q1] Choose the correct answer from those given:

(1) If $\frac{5}{x+2}$ is a rational number then $X \neq$.............

a) -2 b) zero c) 2 d) 5

(2) $(-3X) \times (-5Y) =$ ....

a) $-15xy$ b) $-8xy$ c) $8xy$ d) $15xy$

(3) The mode of the values: 4 , 5 , 4 , 3 , 7 , 5 , 4 is ....

a) 3 b) 4 c) 5 d) 7

(4) The algebraic term $6x^3y^2$ is of .... degree

a) third b) fourth c) fifth d) sixth

(5) The arithmetic mean for the values 3 , 5 – X , 7+ X is ....

a) 2 b) 3 c) 4 d) 5

(6) If $\frac{2}{5}x = 10$ then $\frac{3}{5}x =$............

a) 25 b) 20 c) 15 d) 5

[Q2] Complete each of the following:

1) The multiplicative inverse of the number $\left(\frac{-9}{8}\right)^{zero}$ is.......

2) The number that lies half way between $\frac{1}{2}$ and $\frac{5}{8}$ is.......

3) If △+□ = 20, △ + △+□ = 35 then □ =.....................

4) If the order of the median of a set of values is the fifth, then the number of these Values is ....

5) 1 , 1, 2 , 3 , 5 , 8 , ... (in the same pattern)

[Q3] [A] Simplify: $(X-3)(X+3)+9$

Then calculate its numerical value when $x = 5$

[B] If $X = \frac{1}{2}$, $Y = \frac{-2}{3}$, $Z = 2$, Find the value of $\frac{y-z}{x}$

[Q4] [A] Use the distribution property to find the value of:

$$\frac{7}{12} \times \frac{23}{45} + \frac{17}{12} \times \frac{23}{45} - 2 \times \frac{23}{45}$$

[B] ① Add $5X + 2y - 1$ and $2X - 5y + 3$

② Factorize by identifying the H.C.F:

$$3a(a-2b) - 6b(a-2b)$$

Then find the value of the result when $(a-2b) = \left|-\frac{1}{3}\right|$

[Q5] [A] Divide $2X^2 + 5Xy + 2y^2$ by $2X + y$

Where $2x + y \neq 0$

[B] The following table shows Omar's marks in 6 mathematics examination:

Month	Oct.	Nov.	Dec.	Feb.	Mar.	Apr.
Mark	41	35	47	37	44	48

Find each of the median mark and the mean mark.

End of the questions

35, 37, 41, 44, 47, 48

Directorate of Education
Administration of Distinguished & Governmental Language Schools

Subject : Algebra
Grade : 1st Prep
Time: 2 hours

First Term Exam 2019/ 2020

Answer the following question (The exam in two papers)

الورقة الاولى ((Allowed to use a calculator))

Q1 :Choose the correct answer :

1) The arithmetic mean of values : 3 , 5 , X , 8 , 5 is 6 then X = ...

a) 5 b) 6 c) 8 d) 9

2) The number of integers lying between $\frac{7}{4}$, $\frac{11}{8}$ is ....

a) Zero b) 1 c) 2 d) infinite number.

3) The necessary condition to make $\frac{X-5}{X-3}$ = Zero is ....

a) X = 5 b) X = 3 c) X ≠ 3 d) X= - 5

4) $(a^2 + a) \div a$ = ... Where a ≠ 0

a) a b) a + 1 c) a^2 d) $a^2 + 1$

5) If the median for the values: 11 , 18 , 7 , 10 , 21 is ....

a) 7 b) 10 c) 11 d) 21

6) The smallest fraction of the following is ....

a) $\frac{1}{2}$ b) $\frac{5}{11}$ c) $\frac{2}{3}$ d) $\frac{3}{7}$

Q2: Complete each of the following :

1) $\frac{9}{20}$ = ... %

2) If $(X + y)(2X + y) = 2X^2 + kXy + y^2$, then k = ...

3) If the mode of the values: 15 , 9 , X + 1 , 9 , 15 is 9 , then X = ...

4) 1 , 4 , 9 , 16 , 25 , ... , ... (In the same pattern)

5) The additive inverse of $\left(\frac{-3}{5}\right)^{zero}$ = ...

بقية الأسئلة فى الورقة الثانية

Q3 a) Use the distribution property to find the value of

$$\frac{7}{12} \times \frac{23}{45} + \frac{17}{12} \times \frac{23}{45} - 2 \times \frac{23}{45}$$

b) Subtract : $7X + 5y + z$ from $6y + 2X + z$

Q4 a) Simplify : $(2a - 3)(2a + 3) + 7$, then find the numerical value of the result when $a = -1$

b) Find three rational numbers between: $\frac{2}{3}$ and $\frac{3}{4}$

Q5 a) Divide: $X^2 - 6X + 8$ by $X - 2$ (where $X \neq 2$)

b) The following table shows the marks of Ghad in one Maths test In 6 months.

The month	Oct.	Nov.	Dec.	Feb.	Match	April
The mark	41	35	47	37	44	48

Find : the arithmetic mean for previous marks .

انتهت الاسئلة

With my Best wishes

Educational Directorate shiben elkom Supervisor of :Math	1st term exam Geometry	1st prep. school Time : 2hours	2019-2020

الهندسة والقياس–الصف الاول الاعدادي - لغات

Question (1) Choose the correct answer:

a)If m $(< A)$=130^0 then m$(< A)$ reflex =...............

{ 130^0 ,50^0 ,285^0 , 230^0}

b)If triangle ABC≡triangleXYZ then $\overline{AC}$≡..........

{$\overline{AB}$,$\overline{XY}$,$\overline{YZ}$,$\overline{XZ}$}

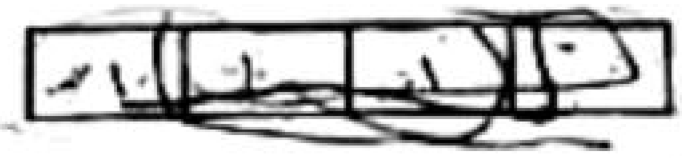
c) Two adjacent angles are supplement then two outer side ....

{Perpendicular , congruent , skew, on the same straight line}

d) If the perimeter of square 24cm its area.........

{8cm^2 , 9cm^2 , 3cm^2 , 36cm^2}

d) In the opposite figure number of rectangles=.........



{4 , 6 , 8 10}

e) L//M ,L//N then two straight line M and N are.......

{ Perpendicular ,parallel ,intersection ,congruent}

Question 2 complete:-

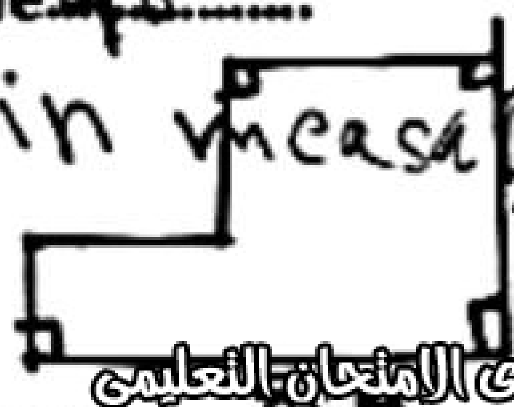
a)two triangles are congruent if two sides and ....congruent with corresponding from the other triangle

b)if a straight line cut two straight lines and two corresponding angles are equal in measure then two straight line are..........

c)the measure of angle 50^{0}complement angle...............

d) Two angles are congruent if.................

e)the perimeter of the opposite figure=.........cm



Question 3) a) use the geometric instilments to draw < ABC its measure 125° then bisect it (don't remove the arcs)

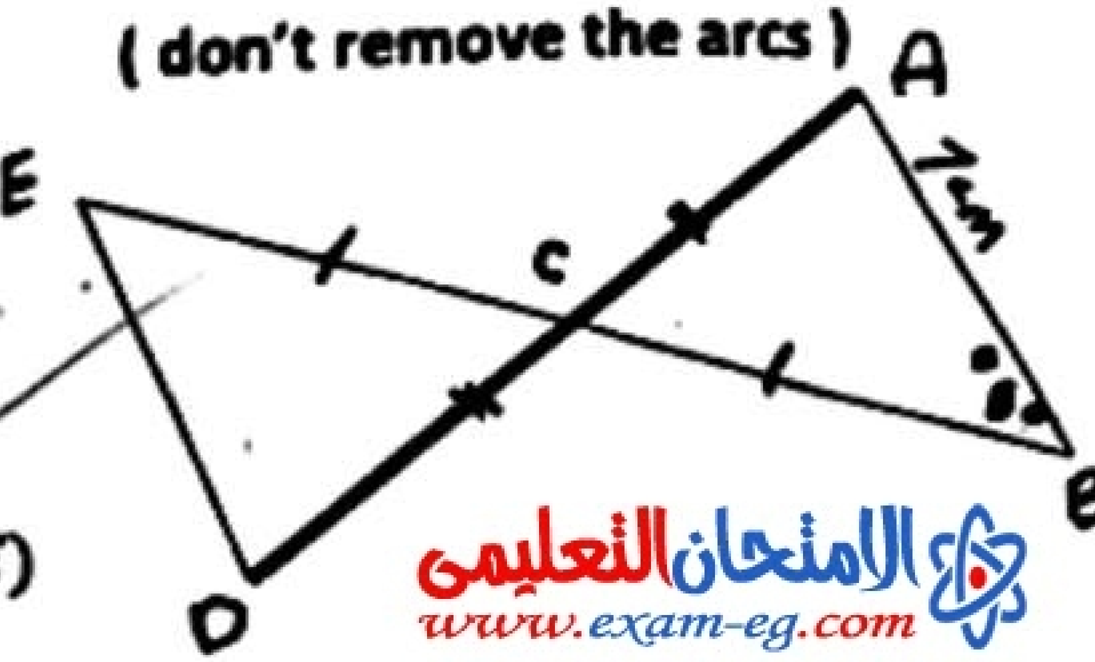
b) In the opposite figure:

AD∩ BE={c} ,AC=CD

BC=CE, AB=7cm, m (<B)=80°

a) Is ΔABC≡ ΔDEC? Why?

b) Find the length $\overline{ED}$, m (< E)

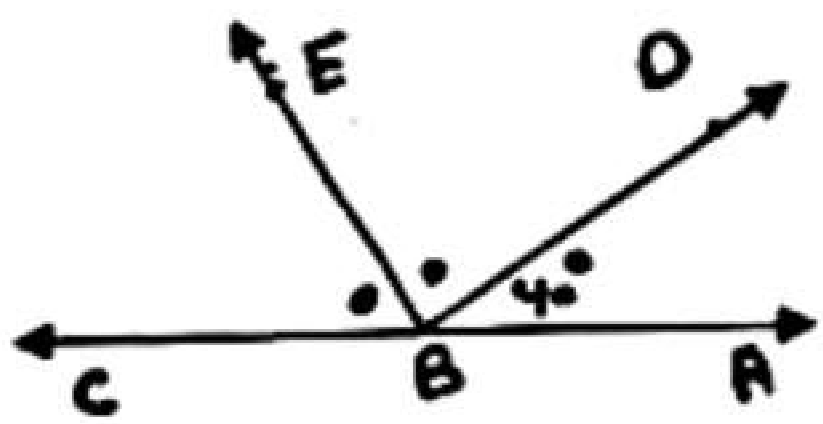


Question 4) ***a) In the opposite figure:***

B∈ $\overleftrightarrow{AC}$

BE bisect m (< DBC) , m (<ABD)=40°

Find: m (<DBC), m (<ABE)



b) In the opposite figure:

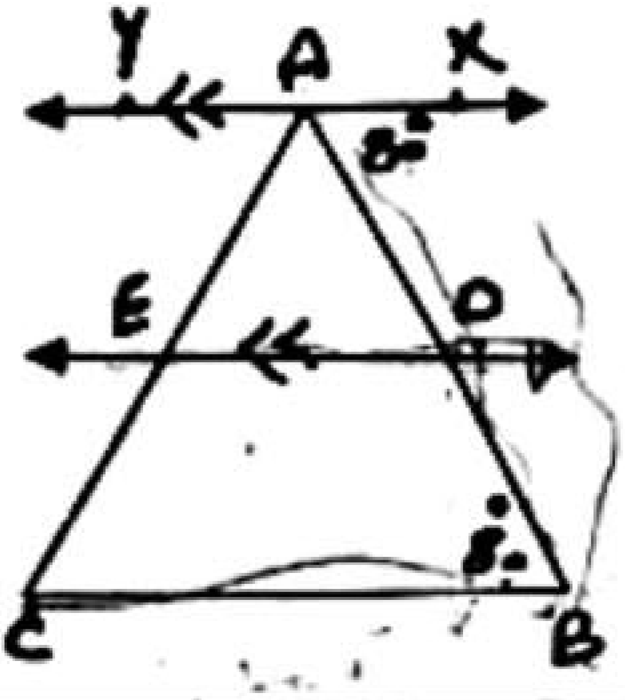
$\overleftrightarrow{XY}$//$\overleftrightarrow{DE}$

m(<XAB)=80° ,m(<B)=80°

AD=BD ,AC=10cm

Is $\overleftrightarrow{DE}$//$\overline{BC}$? Why?

Find the length of $\overline{AE}$ give reison

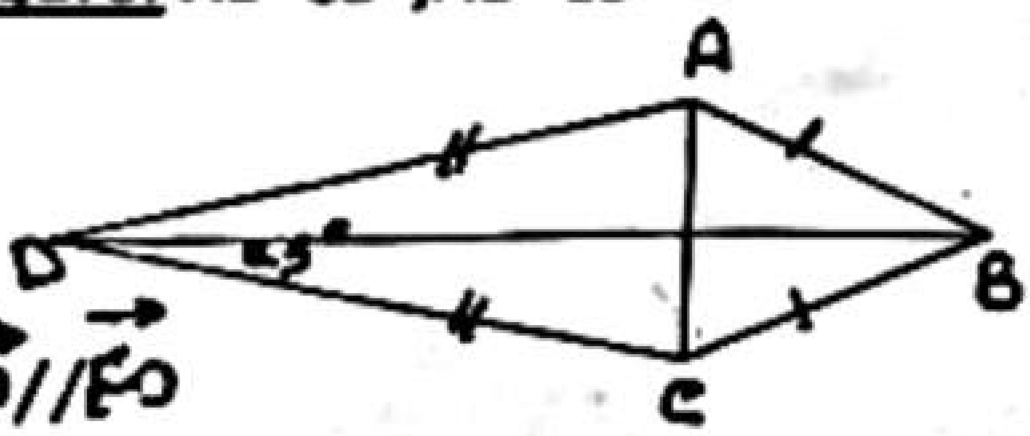


Question 5) ***a) In the opposite figure:*** AB=CB ,AD=CD

m(<CDB)=25°

Is ΔABD≡ ΔCBD? Why?

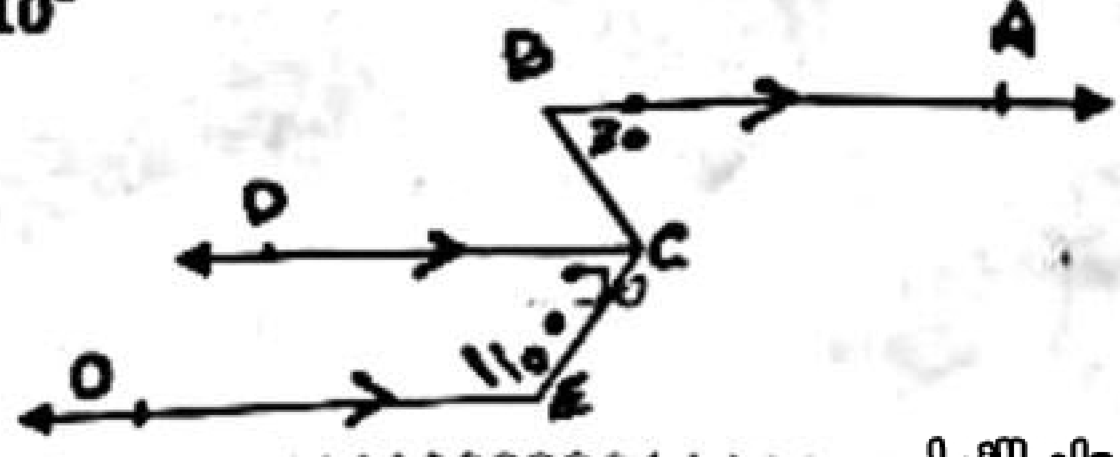
Find m (<ADC)



b) In the opposite figure: $\overleftrightarrow{AB}$//$\overrightarrow{CD}$//$\overrightarrow{EO}$

m (<ABC)=30° ,m(CEO)=110°

Find m(<BCE)



Giza Governorate	Department: Maths.
Omraniya Directorat of Education	Form: 1st PREP.
Al FAROUQ LANGUAGE SCHOOL	(Algebra & Statis.)
Midyear Exam (2017 – 2018)	Time: 2 hrs.

Answer the following:

(1) Complete each of the following:

1) If the rational number $\frac{x-1}{x+5} = 0$, then x = ...

2) The mean of the values : 2 , 3 , 2 , 6 and 7 is ....

3) The rational number which lies half way between $\frac{1}{5}$ and $\frac{2}{3}$ is ....

4) $(2x^3 + x) \div x =$ .... (where $x \neq$ zero)

5) The algebra term $3x^3y^2$ whose degree is ....

(2) Choose the correct answer:

1) The H.C.F. of $9x^2 + 3x$ is ....

a) $9x$ b) $3x$ c) $3x^2$ d) x

2) If $\frac{3}{x-5}$ is a rational number , then $x \neq$ ....

a) 2 b) 3 c) – 5 d) 5

3) The remainder of subtraction $-2x$ from $5x$ is ....

a) $3x$ b) $-10x$ c) $7x$ d) $-7x$

4) The expression $3x^2y - 6x$ whose degree is ....

a) 1 b) 2 c) 3 d) 4

5) The mode of the values : 4 , 5 , 4 , 3 , 7 , 5 , 4 is ....

a) 3 b) 4 c) 5 d) 7

6) $0.\dot{2}\dot{7}$ in t...

a) $\frac{27}{100}$

(3)(A)

6) $0.\dot{2}\dot{7}$ in the form of $\frac{a}{b}$ is ....

a) $\frac{27}{100}$ b) $\frac{27}{90}$ c) $\frac{27}{11}$ d) $\frac{3}{11}$

(3)A) Find the number that lies one third of the way between $\frac{1}{4}$ and $\frac{7}{8}$ from the side of the smaller one.

B) Use the distribution property to find the value of :

$$\frac{7}{13} \times 6 + \frac{7}{13} \times 8 - \frac{7}{13}$$

(4)A) Add: $2X^2 - XY + 5$ to $3X^2 + 2XY - 3$

B) Find the quotient of : $X^2 - 5X + 6$ by $X - 3$ (where $X \neq 3$)

Multiply: $(x-2)(x+2)$, then find the numerical value of t

pression when $x = 3$.

f the arithmetic mean of : $x - 1$, x , $x + 1$ is 12 , then find

WITH OUR BEST WISHES,

Cairo Governorate
El Nozha Ed. Zone
Math. Inspection

first term exam
2017 - 2018

Subject : Algebra
Form : 1st prep
Time : 2 hr

Answer the following questions :

Question (1): Choose the correct answer :

1) The mode of the values 4 , 5 , 4 , 3 , 7 , 4 is .... [3 , 4 , 5 , 7]
2) The result of subtracting -2x from 3x is ...... [5x , -5x , -x , x]
3) The median of 2 , 5 , 6 , 7 , 9 , 11 , 14 , 16 , 21 is ..... [7 , 9 , 11 , 16]
4) The algebraic term $-4xy^5$ is of ...... [third , fourth , sixth , second]
5) The multiplicative inverse of $(\frac{2}{3})^0$ is .... [$\frac{3}{2}$, $-\frac{2}{3}$, 0 , 1]
6) $|-5| - |2| =$ ...... [3 , -3 , 7 , -7]

Question (2): Complete the following :

1) If the arithmetic mean of the values 8 , 7 , 5 , k + 4 is 6 then k = ...
2) If $\frac{x-5}{x-7} = 0$, then x = ...
3) The additive inverse of $(-5)^2$ is ....
4) $\frac{3}{5} + \frac{7}{10} + (-\frac{1}{2}) =$ ......
5) 3 × ...... = 1

Question (3) :

a) Using the distributive property find : $\frac{6}{7} \times 2 + \frac{6}{7} \times 4 + \frac{6}{7}$.

b) find : (2x – 3y) (3x + 7y)

Question (4) :

a) Divide $(x^3y - 4xy^2 + 6xy)$ by (x y) .

b) Find three rational numbers lies between $\frac{1}{2}$, $\frac{1}{3}$.

[بقيه الأسئلة في الصفحة الثانية]

Question (5) :

a) Add : $2x - 7y + z$, $5z + 6y - 2x$.

b) The following table shows the marks of a student in exams in 6 months

Months	Oct.	Nov.	Dec.	Feb	March.	April.
Marks	30	45	35	40	35	50

Find the arithmetic mean of these marks .

Good Luck

Aswan Governorate
Aswan Educational
M. Mekkawy Yacoub languge school

Subject : Algebra
Year : First prep
Time : 2h

First term Exam

Answer the following question

Question one : Choose the correct answer from those given

a) The algebraic term $6x^3y^2$ is of .... Degree .

1) third 2) fourth 3) fifth 4) sixth

b) If 0.18 + 30 %

1) + 12 2) 0.15 3) 48 % 4) 45%

c) The mode of the value 7 , 5 , x + 4 , 5 , 7 is 5 , then x = ...

1) 4 2) 5 3) 7 4) 1

d) The remainder of subtracting $-7x$ from $9x$

1) $16x$ 2) $2x$ 3) $-2x$ 4) Zero

e) The rational number that lies on third of the way between 8 and 12 from the smaller .

1) $8\frac{1}{3}$ 2) 10 3) $9\frac{1}{3}$ 4) $10\frac{2}{3}$

f) $(2x-3)(x+5) = 2x^2$ .... -15

1) $-7x$ 2) $+7x$ 3) $-13x$ 4) $+13x$

Question two : complete

a) $5x^2 + 15xy = 5x$ (......... + ...)

b) $(x-3)$(......... + ...) $= x^2 - 9$

c) The number $\frac{4}{x}$ is a rational number if $x \neq$ ....

d) $24x^4y^6 = 6x^2y^2 \times$ ....

e) $2\frac{1}{5} \times$ .... $= 1$

Question Three :

a) Simplify the simplest form $(2x-3)(2x+3)+7$ and calculate

numerical value of the result when $x = 1$

b) Use the distribution property find the value :

$$\frac{3}{7} \times 2 + \frac{3}{7} \times 6 - \frac{3}{7}$$

Question four :

a) Divide $2x^2 + 13x + 15$ by $x + 5$

$2x+3$

b) Factorize by identifying the H . C . F $12a^2b + 18a^3b^2$

$6ab(a$

uestion five :

ne following table shows Gehad's marks of mathematics in 6 mon

onth	October	November	December	February	Martch
arts	30	35	42	37	44

nd :

a) The median for the previous marks . 39.5

b) The mean for the previous marks . 39.6

Good Luck

$$\frac{12a^2b+18}{6a^2b}$$

$$= 2 + 3ab$$

First Term Exam
First Year Prep
Algebra & Statistics

Damietta Governorate
January 2022
Time : 2 Hour

Answer the Following questions:

Q(1) Choose the correct answer from those given :

(1) If $\frac{5}{x+2}$ is a rational number ,then $x \neq$ ....

(a) - 2 (b) 0 (c) 2 (d) 5

(2) The algebraic term : $2x^3$ is of the .... Degree.

(a) second (b) third (c) fourth (d) fifth

(3) The median of the values : 5 , 7 , 11 , 3 , 9 is ....

(a) 5 (b) 7 (c) 9 (d) 11

(4) The value of number 5 in the number 0.2457 is ....

(a) $\frac{5}{10}$ (b) $\frac{5}{100}$ (c) $\frac{5}{1000}$ (d) $\frac{5}{10000}$

(5) If $(x-7)(x+7) = x^2 + m$, then m = ...

(a) 0 (b) 14 (c) 49 (d) − 49

(6) The number of rational numbers lying between $\frac{1}{5}$, $\frac{3}{5}$ is ....

(a) 1 (b) 2 (c) 3 (d) infinite number

Q (2) Complete the following :

(1) If $\frac{3}{4} + x = 0$ then x = ...

(2) 7.1 kilogram = ...gram

(3) The remainder of subtracting - 3 A from 2A is

(4) If The mode of the values 8 , 9 , K+2 , 6 is 8 then K = ...

(5) $(10y^5 - 2y^2) \div 2y^2$ = ... − 1 (where $y \neq 0$)

Q (3)(a) Add : $2x + 3y - 3$ and $5x - 2y + 1$

(b) Using the distribution property , find : $\frac{5}{12} \times 7 + \frac{5}{12} \times 6 - \frac{5}{12}$

Q (4) (a) Reduce to the simplest form : $(x+2)^2 - 4x$ then find the numerical value of the result when $x = 3$

(b) Factorize by identifying the highest common factor : $5y^3 + 35xy$

Q (5) (a) Find the quotient of : $x^2 + 7x + 10$ by $x + 5$ (where $x \neq -5$)

(b) The following table shows the marks of a student in maths :

Month	October	November	December	February	March	April
Mark	25	25	29	25	28	30

Find: (1) The mode mark (2) The arithmetic mean of these marks

انتهت الأسئلة